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STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES
GEORGE D. NORDENHOLT, Director

DIVISION OF MINES
FERRY BUILDING, SAN FRANCISCO

WALTER W. BRADLEY — State Mineralogist

San Francisco] BULLETIN No. 111 [August, 1935

CALIFORNIA MINERAL PRODUCTION

AND

DIRECTORY OF MINERAL PRODUCERS

FOR 1934

COMPLIMENTS OF
Walter W. Bradley,
STATE MINERALOGIST.



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By
HENRY H. SYMONS

CALIFORNIA STATE PRINTING OFFICE
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Ferry Building, San Francisco, in which are the offices, library, laboratory, and mineral exhibit of the Division of Mines.

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LETTER OF TRANSMITTAL

August, 1935.

To His Excellency, The Honorable Frank F. Merriam,
Governor of the State of California.

Sir: I have the honor to herewith transmit Bulletin No. 111 of the Division of Mines, of the Department of Natural Resources, being the annual report of the statistics of the mineral production of California.

The remarkable variety, total valuation, and wide distribution of many of our minerals revealed herein show California's importance as a producer of commercial minerals among the states of the Union.

Respectfully submitted.

George D. Nordenholt,
Director, Department of Natural Resources.

INTRODUCTION

It is the endeavor of the staff of the State Division of Mines (formerly State Mining Bureau), in these annual reports of the mineral industries of California, to so compile the statistics of production that they will be of actual use to producers and to those interested in the utilization of the mineral products of our State, while at the same time keeping the individual's data confidential. In addition to the mere figures of output, we have included descriptions of the uses and characteristics of many of the materials, as well as a brief mention of their occurrences.

The compilation of accurate and dependable figures is an extremely difficult undertaking, and the State Mineralogist takes the opportunity of here expressing his appreciation of the cooperation of the producers in making this work possible. A fuller appreciation of the value of early responses to the requests sent out in January will result in earlier completion of the manuscript. Statistics lose much of their value if their publication is unnecessarily delayed.

Some of the data relative to properties and uses of many of the minerals herein described are repeated from preceding reports, as it is intended that this annual statistical bulletin shall be somewhat of a compendium of information on California's commercial minerals and their utilization.

WALTER W. BRADLEY,
State Mineralogist.

MINERAL INDUSTRY, CALIFORNIA, 1934

DATA COMPILED FROM DIRECT RETURNS FROM PRODUCERS IN ANSWER TO INQUIRIES SENT OUT BY THE CALIFORNIA STATE DIVISION OF MINES, FERRY BUILDING, SAN FRANCISCO, CALIFORNIA

CHAPTER ONE

The total value for the mineral output for California for the year 1934 was $237,374,709, being an increase of $30,885,651 over the total of 1933 which was $206,489,058. There were fifty-nine different mineral substances, exclusive of a segregation of various stones grouped under gems; and all fifty-eight counties of the state contributed to the list.

As revealed by the data following, the salient features of 1934 compared with the previous year were: All mineral groups and nearly all of the important mineral substances showed increased values, led by petroleum, gold, borates, cement, miscellaneous stone, silver, mineral water, quicksilver, tungsten ore, diatomite, brick and hollow building tile. Those showing a decrease in value were natural gas, copper, potash, limestone.

Of the fuels, petroleum showed an increase in value of $16,465,699 and an increase in amount from 172,139,362 barrels to 174,721,282 barrels of crude oil. The average prices received for all gravities of crude oil were slightly higher than in 1933 and the prices for 1934 were those that took effect on September 6, 1933, and continued the same throughout the year. Natural gas showed a decrease in amount utilized from 271,743,544 M cu. ft. to 263,207,517 M cu. ft. with a decreased total value from $15,403,514 to $14,408,761.

Of the metals, the gold yield showed an increase from 613,578.85 fine ounces to 719,063.92 fine ounces and in value from $15,683,075 to $25,131,284. The gold value in 1934 was calculated on a weighted value of $34.95 per fine ounce, while that for 1933 was $25.56 per fine ounce. Silver increased from 402,591 fine ounces worth $140,907 to 844,413 fine ounces worth $545,883 and quicksilver from 4,102 flasks valued at $229,472 to 7,946 flasks worth $534,135; lead, tungsten and zinc also showed increased output and value, while copper and chromite decreased in value of production. Iron and manganese ores were again added to the active list.

Of the structural materials, cement increased from 7,284,031 barrels worth $10,331,395 to 8,936,085 barrels valued at $12,445,616; miscellaneous stone from a total value of $6,871,580 to $7,131,330; brick and hollow building tile from $1,520,481 to $1,644,661; and granite, lime, magnesite, bituminous rock and sandstone also showed increases

for the year. Decreases were registered by marble (including onyx and travertine) and slate.

Of the industrial materials, increased values were registered by mineral water, barytes, diatomite, silica, pottery clay, pyrite, and talc and soapstone; with slight decline in value shown by gypsum, dolomite, limestone, pumice and volcanic ash. The total value of this group increased from $3,658,249 to $4,276,566.

Of the salines, increases in total values were shown by borates, magnesium salts, bromine and calcium chloride, all other materials in this group showing decreased values. The group as a whole showed an increase in total value from $8,652,224 to $10,413,019.

By Substances.

The following table shows the comparative yield of mineral substances of California for 1933 and 1934, as compiled from the returns received at the State Division of Mines, San Francisco, in answer to inquiry sent to producers:

Substance	1933		1934		Increase+ Decrease— Value
	Amount	Value	Amount	Value	
Barite	8,405 tons	$49,595	21,769 tons	$125,514	$75,919+
Bentonite (fuller's earth)	4,605 tons	60,621	6,168 tons	69,325	8,704+
Borates	197,495 tons	3,019,513	240,696 tons	5,524,262	2,504,749+
Brick & hollow building tile		1,520,481		1,644,661	124,180+
Cement	7,284,031 bbls.	10,331,395	8,936,085 bbls.	12,445,616	2,114,221+
Chromite	*	*	294 tons	3,498	* —
Clay (pottery)	141,629 tons	211,711	190,510 tons	245,900	34,189+
Coal	2,612 tons	11,367	13,549 tons	52,720	41,353+
Copper	992,515 lbs.	63,521	590,638 lbs.	47,252	16,269—
Dolomite	54,456 tons	176,575	*	*	* —
Gems		690		2,456	1,766+
Gold	613,579 fine ozs.	15,683,075	719,084 fine ozs.	25,131,284	9,448,209+
Granite		183,706		249,083	65,377+
Gypsum	59,235 tons	120,451	58,149 tons	113,606	6,845—
Iodine	*	*	355,279 lbs.	423,016	* —
Lead	772,436 lbs.	28,583	804,911 lbs.	29,782	1,199+
Lime	33,425 tons	271,619	32,500 tons	309,765	38,146+
Limestone	207,371 tons	487,712	198,057 tons	461,139	26,573—
Magnesium salts	2,073 tons	159,660	2,325 tons	194,642	34,982+
Marble[a]		23,178		10,759	12,419—
Mineral water	15,650,406 gals.	719,746	19,882,436 gals.	1,071,197	351,451+
Natural Gas	271,743,544 M cu. ft.	15,403,514	263,207,517 M cu. ft.	14,408,761	994,753—
Petroleum	172,139,362 bbls.	143,063,972	174,721,282 bbls	159,529,671	16,465,699+
Platinum	237 ozs.	7,255	520 ozs.	14,884	7,629+
Pumice and volcanic ash	8,234 tons	61,087	9,951 tons	54,248	6,839—
Quicksilver	4,102 flasks	229,472	7,946 flasks	534,135	304,663+
Salt	321,311 tons	1,251,024	332,194 tons	1,222,810	28,214—
Sandstone		10,888		14,245	3,357+
Silica (sand and quartz)	70,329 tons	266,520	70,432 tons	296,643	30,123+
Silver	402,591 fine ozs.	140,907	844,413 fine ozs.	545,883	404,976+
Slate	5,343 tons	31,958	5,065 tons	24,245	7,713—
Soapstone and talc	14,451 tons	153,668	13,920 tons	158,606	4,938+
Soda	70,598 tons	1,019,130	99,380 tons	1,219,561	200,431+
Stone, miscellaneous[b]		6,871,581		7,131,330	259,749+
Sulphur	*	*	4,412 tons	67,656	* +
Tungsten ore	148 tons	76,605	261 tons	224,417	147,812+
Zinc	290,222 lbs.	12,189	721,719 lbs.	31,034	18,845+
Unapportioned		[c]4,766,089		[d]3,741,103	1,024,986—
Total value		$206,489,058		$237,374,709	
Net increase					$30,885,651

* Included under 'Unappropriated.'

[a] Includes onyx and travertine.

[b] Includes macadam, crushed rock, ballast, rubble, rip rap, sand, gravel.

[c] Includes bituminous rock, bromine, calcium chloride, carbon dioxide, chromite, diatomite, feldspar, fluorspar, graphite, iodine, magnesite, mica, mineral paint, molybdenum ore, potash, pyrite, sillimanite-andalusite-cyanite group, sulphur, tube mill pebbles, wollastonite.

[d] Includes bituminous rock, asbestos, bromine, calcium chloride, carbon dioxide, diatomite, dolomite, feldspar, fluorspar, iron ore, magnesite, manganese ore, molybdenum ore, potash, pyrite, sillimanite-andalusite-cyanite group, paving blocks, tube mill pebbles, wollastonite.

By Counties.

The following table shows the comparative value of the mineral production of the various counties in the State for the years 1933 and 1934:

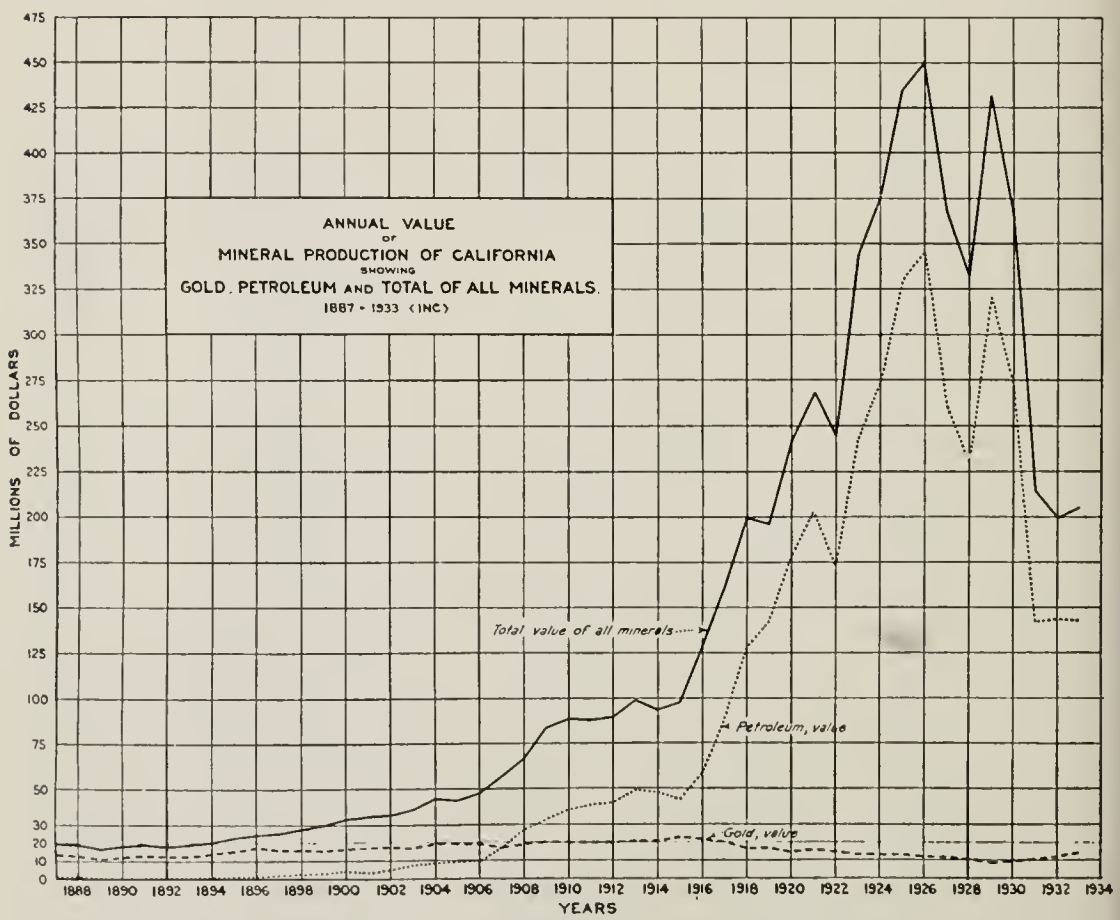
County	*1933 Value*	*1934 Value*
Alameda	$1,930,111	$2,379,633
Alpine	12,724	25,431
Amador	2,028,598	2,400,161
Butte	404,661	637,962
Calaveras	938,981	2,196,592
Colusa	6,396	45,875
Contra Costa	1,231,971	1,734,999
Del Norte	3,062	81,998
El Dorado	920,747	1,738,576
Fresno	3,901,103	5,772,807
Glenn	11,690	30,608
Humboldt	71,051	81,432
Imperial	166,858	108,480
Inyo	1,014,713	1,293,725
Kern	27,877,930	37,053,187
Kings	25,474,252	28,067,389
Lake	134,851	260,481
Lassen	45,739	28,318
Los Angeles	68,785,294	66,359,227
Madera	133,105	264,142
Marin	205,150	183,354
Mariposa	575,118	807,908
Mendocino	35,283	14,351
Merced	766,014	1,050,492
Modoc	166,747	48,117
Mono	81,147	212,438
Monterey	114,040	190,902
Napa	209,542	398,214
Nevada	4,767,391	7,488,996
Orange	19,263,581	25,746,031
Placer	293,866	678,232
Plumas	131,150	181,143
Riverside	2,218,738	2,590,545
Sacramento	3,172,763	3,877,757
San Benito	247,479	266,857
San Bernardino	8,976,485	10,537,050
San Diego	620,881	487,266
San Francisco	7,734	28,641
San Joaquin	153,127	148,097
San Luis Obispo	55,914	138,453
San Mateo	1,569,480	1,562,490
Santa Barbara	7,011,773	7,570,191
Santa Clara	534,378	386,445
Santa Cruz	1,234,180	1,796,844
Shasta	1,113,395	1,145,180
Sierra	449,146	1,046,307
Siskiyou	374,178	648,166
Solano	16,996	23,641
Sonoma	157,988	162,005
Stanislaus	298,847	418,172
Sutter	11,900	3,322
Tehama	30,334	39,575
Trinity	359,503	650,620
Tulare	178,613	184,474
Tuolumne	264,979	423,588
Ventura	14,558,096	13,688,749
Yolo	16,823	38,027
Yuba	1,150,962	1,951,046
Totals	$206,489,058	$237,374,709

Total Mineral Production of California, by Years, Since 1887.

The following tabulation gives the total value of mineral production of California by years since 1887, in which year compilation of such data by the State Mining Bureau (now Division of Mines) began. At the side of these figures have been placed the values of the most important metal and nonmetal items—gold and petroleum.

In the same period copper made an important growth beginning with 1897 following the entry of the Shasta County mines, and later Plumas County. Cement increased rapidly from 1902, while crushed

rock, sand and gravel as a group paralleled the cement increase. Quicksilver has been up and down. Mineral water and salt have always been important items, but the values fluctuate. Borax has increased materially since 1896. War-time increases, 1915–1918, were shown by chromite, copper, lead, magnesite, manganese, silver, tungsten and zinc. Most of these have since declined, though silver, structural materials and copper increased in 1920–1924, also lead and magnesite in 1923; lead and zinc in 1925; zinc in 1926, with silver declining; an increase in quicksilver in 1927–1928, with declines in other metals and by petroleum. Natural gas has shown a steady increase since 1907, and since 1928 its value has been second only to petroleum.



Total Mineral Production of California, by Years, Since 1887

Year	Total value of all minerals	Gold, value	Petroleum, value
1887	$19,785,868	$13,588,614	$1,357,144
1888	19,469,320	12,750,000	1,380,666
1889	16,681,731	11,212,913	368,048
1890	18,039,666	12,309,793	384,200
1891	18,872,413	12,728,869	401,264
1892	18,300,168	12,571,900	561,333
1893	18,811,261	12,422,811	608,092
1894	20,203,294	13,923,281	1,064,521
1895	22,844,663	15,334,317	1,000,235
1896	24,291,398	17,181,562	1,180,793
1897	25,142,441	15,871,401	1,918,269
1898	27,289,079	15,906,478	2,376,420
1899	29,313,460	15,336,031	2,660,793
1900	32,622,945	15,863,355	4,152,928
1901	34,355,981	16,989,044	2,961,102
1902	35,069,105	16,910,320	4,692,189
1903	37,759,040	16,471,264	7,313,271
1904	43,778,348	19,109,600	8,317,809
1905	43,069,227	19,197,043	9,007,820
1906	46,776,085	18,732,452	9,238,020
1907	55,697,949	16,727,928	16,783,943
1908	66,363,198	18,761,559	26,566,181
1909	82,972,209	20,237,870	32,398,187
1910	88,419,079	19,715,440	37,683,542
1911	87,497,879	19,738,908	40,552,088
1912	88,972,385	19,713,478	41,868,344
1913	98,644,639	20,406,958	48,578,014
1914	93,314,773	20,653,496	47,487,109
1915	96,663,369	22,442,296	43,503,837
1916	127,901,610	21,410,741	57,421,334
1917	161,202,962	20,087,504	86,976,209
1918	199,753,837	16,529,162	127,459,221
1919	195,830,002	16,695,955	142,610,563
1920	242,099,667	14,311,043	178,394,937
1921	268,157,472	15,704,822	203,138,225
1922	245,183,826	14,670,346	173,381,265
1923	344,024,678	13,379,013	242,731,309
1924	374,620,789	13,150,175	274,652,874
1925	434,519,660	13,065,330	330,609,829
1926	450,33),856	11,923,481	345,546,677
1927	366,781,394	11,671,018	260,735,498
1928	332,224,233	10,785,315	229,998,680
1929	432,248,228	8,526,703	321,366,863
1930	365,604,695	9,451,162	271,699,046
1931	215,964,420	10,814,162	141,835,723
1932	1 9,196,493	11,765,726	142,890,247
1933	206,489,058	15,683,075	143,063,972
1934	237,374,709	25,131,284	159,529,671
Totals	$6,711,129,562	$757,563,998	$4,230,414,305

CHAPTER TWO

FUELS

Among the most important mineral products of California are its fuels. This subdivision includes coal, natural gas, and petroleum, the combined values which made up practically 73 per cent of the State's entire mineral output for the year 1934.

There are deposits of peat known in several localities in California, small amounts of which are used as a fertilizer, and in stock-food preparations, but none has yet been recorded as utilized for fuel.

Comparison of values during 1933 and 1934 is shown in the following table:

Substance	1933		1934		Increase+ Decrease— Value
	Amount	Value	Amount	Value	
Coal	2,612 tons	$11,367	13,548 tons	$52,720	$41,353+
Natural gas	271,734,544 M cu. ft.	15,403,514	263,207,517 M cu. ft.	14,408,761	994,753—
Petroleum	172,139,362 bbls.	143,063,972	174,721,282 bbls.	159,529,671	16,465,699+
Total values		$158,478,853		$173,991,152	
Net increase					$15,512,299+

COAL

Bibliography: State Mineralogist Reports VII, XII–XV (inc.), XVII, XIX–XXVIII (inc.), XXVI. U. S. Geol. Surv., Bulletins 285, 316, 431, 471, 581; Ann. Rept. 22, Pc. III.

Coal produced in California during 1934 totaled 13,549 short tons valued at $52,720, as compared with the 1933 output, which was 2612 tons worth $11,367. The material mined in 1934 came from a single property each, in Amador, Monterey, Santa Cruz, and Trinity counties. This coal was consumed by the local market and also used on the property for camp purposes, power and forge, to carry on regular operations and development work.

Total Coal Production of California.

The very considerable output of coal in the years previous to 1883 was almost entirely from the Mount Diablo district, Contra Costa County. Later the Tesla mine in Corral Hollow, Alameda County, was an important producer for a few years. Stone Canyon, Monterey County, was also an important producer for a short time, and there has been some coal shipped from properties in Amador, Fresno, Orange, Riverside, Siskiyou and Trinity counties. The following tabulation gives the annual tonnages and values, according to available records:

Coal Output and Value, by Years

Year	Tons	Value	Year	Tons	Value
1861	6,620	$38,065	1899	160,941	$420,109
1862	23,400	134,550	1900	176,956	535,531
1863	43,200	248,400	1901	150,724	401,772
1864	50,700	291,525	1902	88,460	248,622
1865	60,530	348,048	1903	93,026	265,383
1866	84,020	483,115	1904	79,062	376,494
1867	124,690	716,968	1905	46,500	144,500
1868	143,676	826,137	1906	24,850	61,600
1869	157,234	904,096	1907	23,734	55,849
1870	141,890	815,868	1908	18,496	55,503
1871	152,493	876,835	1909	49,389	216,913
1872	190,859	1,097,439	1910	11,033	23,484
1873	186,611	1,073,013	1911	11,047	18,297
1874	215,352	1,238,274	1912	14,484	39,092
1875	166,638	958,169	1913	25,198	85,809
1876	128,049	736,282	1914	11,859	28,806
1877	107,789	619,787	1915	10,299	26,662
1878	134,237	771,863	1916	4,037	7,030
1879	147,879	850,304	1917	3,527	7,691
1880	236,950	1,362,463	1918	6,343	16,149
1881	140,000	805,000	1919	2,983	8,203
1882	112,592	647,404	1920	2,078	5,450
1883	76,162	380,810	1921	12,467	63,578
1884	77,485	309,950	1922	27,020	135,100
1885	71,615	286,460	1923	1,010	5,090
1886	100,000	300,000	1924	1,425	8,800
1887	50,000	150,000	1925	730	3,880
1888	95,000	380,000	1926	1,100	5,000
1889	121,280	288,232	1927	200	1,100
1890	110,711	283,019	1928	782	4,542
1891	93,301	204,902	1929	450	2,476
1892	85,178	209,711	1930	10,885	59,858
1893	72,603	167,555	1931	12,551	77,607
1894	59,887	139,862	1932	9,508	36,468
1895	79,858	193,790	1933	2,612	11,367
1896	70,649	161,335	1934	13,549	52,720
1897	87,449	196,255			
1898	143,045	337,475	Totals	5,258,947	$23,349,496

The tonnages in the above table for the years 1861–1886 (incl.) are taken from the U. S. Geological Survey, "Mineral Resources of the U. S., 1910," p. 107. The values assigned for the years previous to 1883 are those given by W. A. Goodyear (Mineral Res., 1882, pp. 93–94), being an average of $5.75 per ton. From 1887 to date the figures are those of the California State Mining Bureau.

NATURAL GAS

Bibliography: State Mineralogist Reports VII, X, XII, XIII, XIV, XXIX. Bulletins 3, 16, 19, 69, 73, 89. Monthly Summary Oil and Gas Supervisor, Dec., 1919; Aug., 1922; Mar., 1923; Mar. and Apr., 1926.

Statistics on the production of natural gas in California are in a considerable degree difficult to arrive at, as much of it that is utilized directly at the wells for heating, lighting, and driving gas engines is not measured. Hence, it is necessary to approximate the output of many of the operators in the oil fields, estimated on the number of lights, and on the number and horsepower of gas engines and steam boilers thus operated. The figures here given are for gas utilized locally and also that sold for distribution to consumers; and we consider are not overestimated, particularly in the six oil-producing counties. It must be remembered that some of our important oil fields are removed many

miles from the site of any other industry, and that the gathering of small amounts of gas and transporting it for any considerable distance may not always be profitable, nor is it often possible to have pipe-line facilities available to handle the gas accompanying the early gas production in newly developed fields. Wherever feasible, casing-head gas is used in driving gas engines for pumping and drilling, and in firing the boilers of steam-driven plants.

Actual Production of Natural Gas—How Disposed of in California—1934

	Production *M cu. ft.*	*Utilized* *M cu. ft*	*Wasted* *M cu. ft.*	*Stored* *M cu. ft.*
Fresno	19,680,080	19,680,080	---	---
Kern	24,145,999	21,309,723	1,018,844	1,817,432
Kings	99,886,719	96,939,145	2,765,540	182,034
Los Angeles	59,680,662	58,220,382	606,214	854,066
Orange	32,368,357	21,256,008	10,967,399	144,950
Santa Barbara	5,384,021	4,860,533	305,760	217,728
Ventura	42,459,774	40,767,122	1,056,281	636,371
Other counties	174,524	174,524	---	---
Totals	283,780,136	263,207,517	16,720,038	3,852,581

Production and Value.

There is rather a wide variation in prices quoted for natural gas because a considerable part is used directly in the field for driving gas engines and firing boilers, and is therefore not measured nor sold. Such companies as have placed a valuation on the gas that was thus used in 1934 gave from 2¢ to 85¢ per 1000 cu. ft. at the well. From the totals shown in the tabulation following herein, the average value for all fields in 1934 works out at approximately 5.4¢ per M. cu. ft. Approximately 7000 cu. ft. of gas is equal to one barrel of oil in heating value, and is so accounted for by many operators. In driving gas engines, about 4000 cu. ft. per 24 hr, are consumed by a 25-h.p. engine, and 63,700 cu. ft. per day for heating a 70-h.p. steam boiler, which figures have been utilized in compiling this report, in those cases where gas was not metered.

Utilized Production of Natural Gas in California, 1934

	M cu. ft.	*Value*
Fresno	19,680,080	$1,235,707
Kern	21,309,723	1,017,661
Kings	96,939,145	4,957,070
Los Angeles	58,220,382	3,421,320
Orange	21,256,008	1,366,560
Santa Barbara	4,860,533	316,360
Ventura	40,767,122	2,032,849
Butte, Humboldt, Lake, Mendocino, Monterey, Sacramento, San Joaquin, San Mateo, Santa Clara, Sutter*	174,524	61,234
Totals	263,207,517	$14,408,761

* Combined to conceal output of operators in each.

The above totals were a decrease in both amount and value from those of 1933 output, which was 271,743,544 M. cu. ft. valued at $15,403,514. Kings County had the largest production, exceeding Los Angeles County which led all other counties until 1933. All the large producing counties of natural gas showed increased outputs and values with the exception of Kings and Los Angeles counties.

Natural Gas Production in California Since 1888.

The production of natural gas in California by years since 1888 is given in the following table. The first economic use of natural gas in

California was from the famous courthouse well at Stockton, bored in 1854–1858. Beginning about 1883 and for several succeeding years, a number of gas wells were brought in around Stockton, and later at Sacramento. Natural gas was known in a number of other localities, and occasionally utilized in a small way, notably at Kelseyville in Lake County, and in Humboldt County near Petrolia and Eureka, but there are no available authentic records of amounts or values previous to the year 1888. The most important developments in the commercial production of natural gas have been coincident with developments in the oil fields, by utilizing the casing-head gas as well as that from dry-gas wells.

Natural Gas Production in California Since 1888

Year	M cubic feet	Value	Year	M cubic feet	Value
1888	[a]12,000	$10,000	1913	14,210,836	$1,053,292
1889	[a]14,500	12,680	1914	16,529,963	1,049,470
1890	[a]41,250	33,000	1915	21,992,892	1,706,480
1891	[a]39,000	30,000	1916	28,134,365	2,871,751
1892	[a]75,000	55,000	1917	44,343,020	2,964,922
1893	[a]84,000	68,500	1918	46,373,052	3,289,524
1894	[a b]85,000	75,000	1919	52,173,503	4,041,217
1895	[a b]110,000	100,000	1920	58,567,772	3,898,286
1896	[a b]131,000	110,157	1921	67,043,797	4,704,678
1897	[a]71,300	62,657	1922	103,628,027	6,990,030
1898	[a]111,165	74,424	1923	240,405,397	15,661,433
1899	115,110	95,000	1924	209,021,596	15,153,140
1900	40,566	34,578	1925	194,719,924	15,890 082
1901	120,800	92,034	1926	214,549,477	19,465,347
1902	120,968	99,443	1927	224,686,940	20,447,294
1903	120,134	75,237	1928	260,887,116	22,260,947
1904	144,437	91,035	1929	400,129,201	29,675,546
1905	148,345	102,479	1930	315,513,952	24,559,840
1906	168,175	109,489	1931	344,959,920	16,690,695
1907	169,991	114,759	1932	284,168,872	16,272,061
1908	842,883	474,584	1933	271,743,544	15,403,514
1909	1,148,467	616,932	1934	263,207,517	14,408,761
1910	10.579,933	1,676,367			
1911	[a]5,000,000	491,859	Totals	3,709,984,707	$264,103,620
1912	[a]12,600,000	940,076			

[a] Quantity, in part, estimated, where values onlv were reported.
[b] Tabulations previous to 1933 included values of CO_2, now showing under "Industrial Materials."

Gasoline from Natural Gas.

More or less gas usually accompanies the petroleum in the oil fields, and such gas carries varying amounts of gasoline. A total of 95 plants were in operation in 1934 recovering gasoline by compression or absorption from this 'casing-head' gas. After the gasoline is extracted the remaining 'dry gas' so far as practicable is taken into pipe lines, by which it is distributed to consumers, both domestic and commercial.

A total of 505,929,436 gallons of casing-head gasoline valued at $31,089,877 was reported made from all fields in California by plants during 1934, compared with 497,350,701 gallons worth $24,284,392 from 103 plants in 1933. The 1934 output was distributed as follows:

County	*No. plants*	*Gallons*	*Value*
Kern	18	38,914,431	$1,894,848
Kings	7	152,815,682	9,966,451
Los Angeles	40	192,680,096	12,058,948
Orange	11	63,034,240	4,129,960
Santa Barbara	6	10,643,968	541,758
Ventura	11	47,813,416	2,494,998
Other counties	2	27,603	2,914
Totals	95	505,929,436	$31,089,877

The usual recoveries of gasoline from natural gas vary from ½ gal. to 3 gal. per 1000 cu. ft. of gas handled, the average being about 1 gal. per 1000 cu. ft. The U. S. Bureau of Mines Report by Knudsen [1] gives the average recovery for 1934 as 1.544 gallons per 1000 cu. ft. of gas treated. His figures show the following production by methods:

	M cu. ft. natural gas treated	*Gallons gasoline recovered*	*Recovery gal. per M cu. ft.*
Oil absorption	321,693,015	498,258,022	1.544

PETROLEUM

Bibliography: State Mineralogist Reports IV, VII, X, XII, XIII, XXIX. Bulletins 3, 11, 16, 19, 31, 32, 63, 69, 73, 82, 84, 89. Reports of Oil and Gas Supervisor 1915 to date (issued in monthly chapters since April, 1919, to June, 1929, and quarterly from then on). U. S. Geol. Surv. Bulletins 213, 285, 309, 317, 321, 322, 340, 357, 398, 406, 431, 471, 541, 581, 603, 621, 623, 653, 691. Prof. Papers 116, 117. "American Petroleum; Supply and Demand"; Amer. Petr. Inst., 1925.

The crude petroleum produced in California during 1934 amounted to a total of 174,721,282 barrels, having a value of $159,529,671 at the well. This was a decrease in quantity with an increased value as compared with the 1933 output, which was 172,139,362 barrels worth $142,063,972.

This total of quantity is compiled from the monthly production reports filed by the operators with the State Oil and Gas Supervisor.

The question of the value of the crude oil yield at the well is a difficult one to settle with exactitude principally because a large part of the output is not sold until after refining. The large refiners are also large producers of crude oil which they send direct from well to plant, hence much of the crude oil is not sold as such.

The value used in the statistical reports of the State Mining Bureau and the Division of Mines from 1914 to 1927 (inc.) was derived from an average of actual sales of crude oil of all grades in each field of the State and their average applied to the total yield of each respective field. The 1929–1933 values, used by the Division of Mines, were obtained by using the production of crude oil by gravities produced in each field[2] and applying an average of current price quotations for crude oil at the well as compiled by California Oil and Gas Association.

The value given to the 1934 petroleum output by this department was obtained by using the average gravity oil for each field, to which was applied the average quotation for the year of said grade oil.

[1] Knudsen, E. T., The Petroleum situation in the Pacific Coast territory (Monthly for 1934), U. S. Bureau of Mines.

[2] By courtesy of Standard Oil Co. of California.

TABLE A

Production and Value of Crude Oil by Counties

County	1933 Barrels	1933 Value	1934 Barrels	1934 Value
Fresno	4,516,246	$2,586,609	6,607,661	$4,295,980
Kern	35,349,272	23,521,406	41,823,494	30,475,225
Kings	21,663,622	20,253,320	21,393,483	23,104,962
Los Angeles	67,299,626	60,023,645	60,297,000	59,711,578
Orange	22,046,475	18,239,046	25,891,732	24,258,123
Santa Barbara	6,395,679	5,999,786	6,648,120	6,322,148
Ventura	14,793,286	12,398,253	12,007,550	11,331,335
Colusa, San Bernardino, San Luis Obispo, San Mateo, Santa Clara, Tulare*	75,156	41,610	52,242	30,320
Totals	172,139,362	$142,063,972	174,721,282	$159,529,671

* Combined to conceal the output of operators in each.

The foregoing totals show the average price of $0.913 per barrel for the year 1934, as compared with $0.831 in the year 1933, $0.807 in 1932, $0.753 in 1931, $1.195 in 1930, and $1.094 in 1929.

TABLE B

Average Price of Oil per Barrel, by Counties, 1925-1934

County	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934
Fresno	$1.094	$0.815	$0.830	$0.764	$0.519	$0.568	$0.551	$0.556	$0.573	$0.650
Kern	1.432	1.445	1.139	.835	.741	.838	.636	.658	.665	.729
Kings					1.674	1.515	.723	.837	.934	1.085
Los Angeles	1.429	1.645	1.115	1.051	1.189	1.297	.784	.860	.892	.990
Orange	1.417	1.559	1.207	.935	.986	1.060	.753	.762	.827	.937
San Luis Obispo	1.087							.550		
Santa Barbara	.914	.793	.750	1.108	1.255	1.404	.954	.962	.848	.951
Santa Clara	1.634							.550		
Ventura	1.710	1.512	1.177	1.098	1.150	1.396	.771	.849	.838	.944
State averages	$1.422	$1.538	$1.127	$0.992	$1.094	$1.195	$0.753	$0.807	$0.831	$0.913

For several years previous to 1919, the State average value per barrel at the well for crude oil as determined by the statistical returns was noted to practically coincide with the quotations during the same years for 23° gravity oil in the San Joaquin Valley fields. In 1919 and since, the average values have worked out at figures corresponding to quotations up to, in one year as high as 28° oil, due to the large yield of high-gravity oils from the new fields in the Los Angeles-Orange counties area.

Features of 1934.

Summary of data for the year, as given by the State Oil and Gas Supervisor,[1] is indicated as follows:

Production.

"The total production in the state for the last six months of 1934 was 88,752,802 barrels of oil and 71,004,276 barrels of water. The production of oil for the year 1934 was, therefore, 174,720,186 barrels, an increase of 2,581,307 barrels compared with that of 1933.

"The production of oil for the second half of 1934 was 2,785,418 barrels more than for the first half. Water production increased 5,853,829 barrels during the same period. Summarized production

[1] Bush, R. D., Resume of the Oil Field Operations in 1934, Summary of Operations —California Oil Fields, Vol. 20, No. 3, January, February, and March, 1935.

records of the five districts over six-month periods in 1933 and 1934 are given in Table 1.

"Table 11 gives the segregated data of production of clean oil and water in the various fields of the state for the semiannual period closing December 31, 1934. These data are compiled by the field offices of the Division of Oil and Gas from the monthly production reports, giving the individual well productions, filed with the State Oil and Gas Supervisor by all producing companies.

"The estimated closed-in production was increased in 1934 from 170,710 barrels in January to 234,973 barrels in Decembar. The increased closed-in production occurred principally in Kettleman North Dome, Coyote Hills, Dominguez, and Santa Fe Springs fields." * * *

Storage and Price Changes.

"The total crude and refined petroleum in storage in Pacific Coast territory at the end of 1934 was 126,218,317 barrels according to American Petroleum Institute. The decrease in storage during the year was 25,540,950 barrels, compared with a decrease of 11,781,856 barrels during 1933. The total amount of crude and refined oil shipped to eastern ports during 1934 was 25,206,000 barrels or 6,292,000 barrels more than 1933 shipments. Prices of crude oil effective September 6, 1933, remained unchanged throughout 1934.

Drilling and Development.

"During 1934, 631 wells were reported to the State Oil and Gas Supervisor as ready to drill as compared with 596 wells in 1933. The outstanding events of 1934 were the completion of a large well extending considerably the known limits of the Playa del Rey field; the discovery of a deep zone in the Inglewood field; the completion in North Belridge of a large well in the deep Wagonwheel zone; resumption of development in the Edison field; the rapid development of the productive Mountain View field. These developments, as well as the details of operations in the five districts of the state as reported by the deputy supervisors, are given in the following pages."

TOTAL PETROLEUM PRODUCTION OF CALIFORNIA

The presence of oil seepages and springs in Los Angeles and Ventura counties was known and utilized in a small way early in the history of California. Some also was shipped to refineries at San Francisco from Santa Barbara and Humboldt counties. In the light of present-day developments, the following reference to the previous year's production of oil and its future prospects as expressed by the San Francisco Bulletin of January 8, 1866, is strikingly prophetic even though skeptical:

"It is possible that the small quantity received (40,000 or 50,000 gallons in 1865) may be the forerunner of many millions which will, at some future time, lubricate the wheels of commerce and set a trade at work excelling in variety any that has thus far been known on this coast. At present, however, we admit to being a little skeptical about the assumption of the astute Professor Silliman that California will be found to have more oil in its soil than all the whales in the Pacific Ocean."

According to Hanks,[1] in 1874 production amounted to 36 bbl. per day from natural flows in Pico Cañon (Newhall), and at Sulphur Mountain (Ventura County), the oil being of 32° gravity average.

[1] Hanks, Henry G., Report IV of State Mineralogist, p. 298, 1884.

"Work was commenced in Pico Canyon in 1875 by drilling three shallow wells with spring pole, all of which yielded oil at depths of from 90 to 250 feet. Actual work of development commenced with steam machinery in 1877."[1]

In 1877 Pico averaged 40–50 bbl. daily, and Ventura 80 bbl. daily. In 1878, there was some production (at 60 bbl. per day, for a time) from wells in Moody Gulch, near Los Gatos, Santa Clara County, the oil being of 46° Baumé.

The first wells in the Coalinga, Fresno County, and Summerland, Santa Barbara County, fields were drilled in 1890, but Coalinga did not make its influence felt conspicuously on the state's annual output until 1903. The Summerland yield never has been large. The Salt Lake field near Los Angeles began production in 1894 and in 1897 reached over a million barrels annually.



Well of Rincon Oil Company, in Pacific Ocean at Rincon Field, Ventura County.

Photo by Walter W. Bradley.

In the Kern County fields, the first well was drilled in Sunset in 1891, Midway in 1900, McKittrick in 1892, Kern River in 1899. The Sunset-Midway district attained a yield of over 4,000,000 bbl. in 1909, and over 20,000,000 bbl. in 1910. Kern River field produced over 3,000,000 bbl. in 1901.

The first well in the Santa Maria-Lompoc group, Santa Barbara County, was drilled in 1901, and the district advanced to a yield of over 3,000,000 bbl. annually in 1905.

The Whittier-Fullerton field in Los Angeles and Orange counties became an important factor in 1902. The Montebello field, Los Angeles County, was the conspicuous addition in 1918-1919; and Elk Hills, Kern County, with Huntington Beach and Richfield, Orange County, in 1920. In 1921, the new fields added were Long Beach and Santa Fe

[1] *Idem*, p. 301.

Springs, Los Angeles County; in 1922, Torrance field in Los Angeles County, and Wheeler Ridge field in Kern County; but the production from the large number of new wells started in these new Los Angeles County fields did not reach its peak until August and September, 1923. Dominguez (Compton) came in during 1923; followed by Rosecrans and Inglewood in 1924. Ventura recorded important additions to its producing area in 1925 and 1926. Seal Beach, Orange County, and Mt. Poso, Kern County, were the new fields added in 1926; Round Mountain, Kern County, and Rincon, Ventura County, were the new fields added in 1927; with Potrero in Los Angeles County, Elwood in Santa Barbara County and Kettleman Hills in Kings County in 1928.

During 1929 Playa del Rey was added to the oil fields in Los Angeles County.

The effect of the advent of these various fields to the producing column will be noted in the tabulation herewith, by years:

TABLE C

Total Petroleum Production In California

Year	Barrels	Value	Year	Barrels	Value
To and inc. 1875	[a] 175,000	[b] $472,500	1906	32,624,000	$9,238,020
1876	12,000	30,000	1907	40 311,171	16,783,943
1877	13,000	29,250	1908	48,306,910	26,566,181
1878	15,227	30,454	1909	58,191,723	32,398,187
1879	19,858	39,716	1910	77,697,568	37,689,542
1880	40,552	60,828	1911	84,648,157	40,552,088
1881	99,862	124,828	1912	89,689,250	41,868,344
1882	128,636	257,272	1913	98,494,532	48,578,014
1883	142,857	285,714	1914	102,881,907	47,487,109
1884	262,000	655,000	1915	91,146,620	43,503,837
1885	325,000	750,750	1916	90,262,557	57,421,334
1886	[a] 377,145	[b] 870,205	1917	95,396,309	86,976,209
1887	678,572	1,357,144	1918	99,731,177	127,459,221
1888	690,333	1,380,666	1919	101,182,962	142,610,563
1889	303,220	368,048	1920	103,377,361	178,394,937
1890	307,360	384,200	1921	112,599,860	203,138,225
1891	323,600	401,264	1922	138,468,222	173,381,265
1892	385,049	561,333	1923	262,875,690	242,731,309
1893	470,179	608,092	1924	228,933,471	274,652,874
1894	783,078	1,064,521	1925	232,492,147	330,609,829
1895	1,245,339	1,000,235	1926	224,673,281	345,546,677
1896	1,257,780	1,180,793	1927	231,195,774	260,735,498
1897	1,911,569	1,918,269	1928	231,811,465	229,998,680
1898	2,249,088	2,376,420	1929	292,534,221	321,366,863
1899	2,677,875	2,660,793	1930	227,328,988	271,699,046
1900	4,319,950	4,152,928	1931	188,310,605	141,835,723
1901	7,710,315	2,961,102	1932	177,745,286	142,890,247
1902	14,356,910	4,692,189	1933	172,139,362	143,063,972
1903	24,340,839	7,313,271	1934	174,721,282	159,529,671
1904	29,736,003	8,317,809			
1905	34,275,701	9,007,820	Totals	4,239,405,755	$4,234,020,822

[a] U. S. G. S., Min. Res. of U. S., 1886, p. 440, for quantities to and including 1886.
[b] Values have been estimated for the years to and including 1886, after consulting a number of contemporaneous publications, including the Mining & Scientific Press, Reports of the State Mineralogist, and U. S. Reports. The figures for 1887 to date are from records of the State Mining Bureau.

Well Data.

The following table is compiled from monthly statements issued by the American Petroleum Institute:

TABLE D

Wells Operated, by Fields, 1934

Field	Wells producing Dec. 1933	Wells producing Dec. 1934	Wells completed during year	Daily initial output	Wells abandoned during year	Bbls. per well produced per day Dec. 1933	Bbls. per well produced per day Dec. 1934
Group No. 1—Belridge—North	----	23	4	21,677	1	----	229.4
Belridge—South	----	140	----	----	2	----	21.6
Coalinga	866	952	1	55	8	17.3	18.8
Edison	----	14	11	3,287	7	----	106.1
Elk Hills	218	168	----	----	1	50.6	47.8
Fruitvale	64	67	8	4,685	5	68.5	52.6
Kern River	1,104	1,385	5	681	10	7.6	7.5
Kettleman M. D.	1	2	1	1,250	----	545.0	252.5
Kettleman N. D.	48	75	41	286,592	1	1,101.2	786.3
Lost Hills-Belridge	286	----	----	----	----	37.9	----
Lost Hills	----	315	----	----	----	----	14.4
McKittrick	167	184	2	194	5	13.4	17.1
Midway-Sunset	2,065	2,478	11	3,715	35	24.7	20.7
Mountain View	6	50	49	70,881	6	505.8	223.5
Mt. Poso	112	152	44	23,773	12	74.9	74.8
Round Mountain	37	49	3	870	2	129.8	95.1
Wheeler Ridge	34	34	----	----	----	13.3	12.0
Group No. 2—Capitan	6	13	5	2,442	----	79.5	56.2
Elwood	47	51	9	8,839	1	264.8	189.4
Rincon	34	30	1	24	2	47.6	36.6
San Miguelito	2	4	1	333	1	450.5	156.5
Santa Barbara	15	52	39	32,242	5	37.7	81.2
Santa Maria	180	187	5	421	12	28.7	25.4
Summerland	52	17	1	(gas)	----	1.4	2.4
Ventura Avenue	175	178	12	12,693	11	190.6	131.2
Ventura Newhall	462	464	7	303	36	7.2	8.9
Watsonville	7	7	----	----	----	8.6	8.6
Group No. 3—Brea-Olinda	----	352	2	1,750	3	----	29.8
Coyote-East	----	76	3	175	1	----	33.8
Coyote-West	99	25	9	4,078	1	110.0	352.4
Dominguez	65	71	27	19,176	4	288.4	357.8
Fullerton (Brea-Olinda)	352	----	----	----	----	26.7	----
Huntington Beach	420	469	28	26,937	32	114.3	86.8
Inglewood	206	206	8	10,151	4	44.0	46.9
Lawndale	8	6	----	----	2	20.8	21.1
Long Beach	996	1,091	83	19,843	31	61.4	57.1
Los Angeles-Salt Lake	169	126	----	----	39	4.3	6.4
Montebello	175	160	9	2,479	4	29.6	38.6
Newport	----	----	----	----	----	----	----
Playa del Rey	175	160	6	8,486	11	54.2	53.5
Potrero	11	12	----	----	3	36.8	36.9
Richfield	193	249	----	----	14	38.9	32.9
Rosecrans	66	70	----	----	9	42.2	41.2
Santa Fe Springs	520	492	16	2,540	23	81.3	78.6
Seal Beach	113	110	1	65	2	94.1	79.1
Torrance	449	474	----	----	8	15.0	14.7
Whittier	151	159	----	----	----	7.3	7.0
Group No. 4—Buttonwillow Gas Field	1	----	----	----	----	(Gas)	----
Dudley Ridge Gas Field	----	----	----	----	4	(Gas)	----
Golita Gas Field	1	----	----	----	----	(Gas)	----
Miscellaneous drilling	----	----	----	----	89	----	----
Totals	10,158	11,399	452	570,637	447	46.8	42.3

Specific Gravity of Oils Produced.

The proportion of heavy and light oil produced in the various fields is shown in Table E, following, for which we are indebted to the Standard Oil Company. Specific gravities in California range from 8° Baumé in the Casmalia field, Santa Barbara County, to 60° in Kettleman Hills, Kings County.

California crude oils are all essentially of asphalt base, with a few notable exceptions. In the following localities are wells yielding crudes containing both asphalt and paraffine constituents: Oil City field, Coalinga; a few deep wells in East Side field, Coalinga; a considerable part of the Ventura County field; Western Minerals area, south of Maricopa; Wheeler Ridge, Kern County.

TABLE E

Production of Light and Heavy Oils, by Fields, for 1934

Field	*Under 20° (barrels)*	*20° and above (barrels)*	*Total (barrels)*
San Joaquin Valley—			
Belridge	387,895	2,563,034	2,950,929
Edison	74,638	82,139	156,777
Coalinga	2,860,513	3,727,680	6,588,193
Elk Hills	868,860	2,465,268	3,334,128
Fruitvale	136,554	1,179,236	1,315,790
Kern River	3,697,586	———	3,697,586
Kettleman Hills	———	21,390,903	21,390,903
Lost Hills	697,295	773,966	1,471,261
McKittrick	1,097,013	———	1,097,013
Midway-Sunset	7,436,735	12,248,720	19,685,455
Mountain View	7,037	2,561,956	2,568,993
Mount Poso	3,445,880	———	3,445,880
Round Mountain	1,097,352	710,615	1,807,967
Wheeler Ridge	———	154,170	154,170
Coastal—			
Arroyo Grande	43,578	———	43,578
Capitan	21,033	173,562	194,595
Elwood	———	4,114,387	4,114,387
Lompoc	28,505	21,203	49,708
Newhall	14,961	75,862	90,823
Rincon	———	538,129	538,129
Santa Barbara	533,948	57,312	591,260
Santa Maria	216,806	1,473,907	1,690,713
San Miguelito	———	268,522	268,522
Summerland	18,945	———	18,945
Ventura Avenue	———	9,890,420	9,890,420
Ventura County	45,195	1,252,928	1,298,123
Watsonville	23,725	———	23,725
Southern California—			
Coyote	69,609	4,086,181	4,155,790
Del Rey	———	3,212,042	3,212,042
Dominguez	———	6,655,765	6,655,765
Huntington Beach	643,271	14,467,249	15,110,520
Inglewood	842,065	2,536,052	3,378,117
Lawndale	———	55,054	55,054
Long Beach	201,802	22,922,893	23,124,695
Los Angeles	112,504	———	112,504
Montebello	193,009	1,780,875	1,973,884
Olinda Brea	428,872	3,316,484	3,745,356
Potrero	———	147,730	147,730
Richfield	459,714	2,474,984	2,934,698
Rosecrans	———	1,037,055	1,037,055
Salt Lake	182,404	———	182,404
Santa Fe	37,250	14,681,942	14,719,192
Seal Beach	———	3,499,356	3,499,356
Torrance	1,506,094	1,014,753	2,520,847
Whittier	280,880	110,416	391,296
Miscellaneous	2,662	750	3,412
Totals	27,714,190	147,723,500	175,437,690

Oil in "Storage."

Field, refinery, pipe-line and tank farm stocks of crude and refined products in the Pacific Coast[1] territory totaled 126,218,319 barrels December 31, 1934, as compared with 151,757,267 barrels on December 31, 1933. The total decrease in stock for the year was 25,540,930 barrels.

[1] Standard Oil Bulletin, February, 1935, p. 15.

	Dec. 31, 1934 (barrels)	Dec. 31, 1933 (barrels)
1. Nongasoline-bearing crude, residuum, gas and Diesel oils	67,182,258	92,664,274
2. Gasoline-bearing crude	37,549,934	35,879,163
3. Unblended natural gasoline	2,446,840	2,304,194
4. Gasoline (not including distributing and service stations)	10,343,477	12,687,385
5. Naptha distillates	928,053*	1,347,891*
6. All other stocks	7,767,755‡	6,876,360‡
7. Total all stock	126,218,317	151,759,267
* Estimated amount of unfinished gasoline contained in item No. 5	753,082	1,024,397
‡ Coke included in item No. 6	568,915	620,313

Utilization of California's Crude Oil.

Most of the crude oil produced in California is sent to storage reservoirs at tank farms near the oilfields and from these reservoirs by pipelines to the refineries, the larger ones of which are located in the vicinity of Los Angeles and on San Francisco Bay.

During 1934 the crude oil consumed in California, according to the U. S. Bureau of Mines [1] was 156,335,410 barrels sent to stills at the refineries; 140,750 barrels went to intercoastal shipments; 10,237,460 barrels to foreign shipments; and 13,788,532 barrels were either consumed as fuel or added to residuum and nongasoline bearing crude.

The production of petroleum products during 1934 is shown in Table F.

TABLE F

Commodity	*Amount in barrels*
Crude petroleum run to stills	156,335,410
Natural gas gasoline	10,424,866
Gasoline	60,204,177
Kerosene	6,122,762
Lubricating oil and greases	1,656,020
Gas oil and Diesel oil	23,618,504
Residuum and nongasoline bearing crude [a]	62,478,485
Asphalt and road oil	3,980,010
Coke (in tons)	368,188
Unfinished—Naptha distillates	2,808,586
Other unfinished oils	2,221,296
Shortage and still gas production	5,262,753
Total [b]	166,760,276

[a] Includes 13,788,532 barrels of heavy crude oil added to residuum.
[b] Total of crude oil and natural gas gasoline.

Operating Data.

The following tabulation (Table G) is compiled from data published by the State Division of Oil and Gas,[2] semiannually, and here combined to show the entire year's operations for all fields. The districts are the geographical subdivisions as administered by that Division, and which are outlined on the accompanying map.

It will be noted that the State average yield of oil per-well-per-day was 50.6 barrels for the first six months of 1934 and 48.2 barrels for the second. This is somewhat higher than the figure 42.2 barrels average for December derived from American Petroleum Institute data as shown in Table D, on a previous page, due in part at least, to the fact that the latter is on a full-time basis, whereas the Division's figures allow for shut-down time.

[1] Knudsen, E. T., The petroleum situation in the Pacific Coast territory (monthly) 1934, U. S. Bureau of Mines.
[2] Summary of Operations—California Oil Fields; Division of Oil and Gas, Fifteenth Annual Report of State Oil and Gas Supervisor, Vol. 20, No. 1, July, Aug., Sept., 1934, and No. 3, Jan., Feb., March, 1935.

TABLE G. Production Statistics and Operating Data of California Oil Fields—1934

Field	January 1 to June 30						July 1 to December 31					
	Average number of producing wells—actual	Oil (bbls.)	Number of days producing	Production per well per day (bbls.)		Percentage of time wells produced	Average number of producing wells—actual	Oil (bbls.)	Number of days producing	Production per well per day (bbls.)		Percentage of time wells produced
				Oil	Water					Oil	Water	
Dist. 1—Beverly Hills	11	42,576	1,559	27.3	24.7	78.3	11	51,604	1,758	29.3	23.2	86.9
Brea-Olinda	321	1,760,782	51,644	34.1	12.0	88.9	331	1,998,260	54,835	36.4	11.8	90.0
Coyote Hills	107	1,985,990	14,953	132.8	38.3	77.2	113	2,140,991	16,243	131.8	38.8	78.1
Dominguez	65	3,279,568	9,942	329.9	55.7	84.5	74	3,392,702	11,344	299.1	51.3	83.3
Huntington Beach	460	7,459,135	68,618	108.7	50.3	82.4	[3]470	7,621,912	73,382	103.9	59.1	84.9
Inglewood	198	1,629,279	28,451	57.3	49.4	79.4	201	1,754,087	28,288	62.0	55.6	76.5
Lawndale	7	28,463	1,237	23.0	44.8	97.6	6	25,416	1,063	23.9	44.7	96.3
Long Beach	1,059	11,246,651	163,911	68.6	83.3	85.5	[3]1,100	11,338,982	173,730	65.2	83.3	85.8
Los Angeles City	90	33,052	15,534	2.1	4.1	95.4	85	33,269	15,195	2.2	1.5	97.2
Montebello	169	929,707	24,753	37.6	100.7	80.9	168	1,064,083	27,135	39.2	106.9	87.8
Newhall	75	45,060	13,363	3.4	3.8	98.4	75	46,792	13,238	3.5	3.3	95.9
Playa del Rey	174	1,588,221	28,560	55.6	65.3	90.7	169	1,464,801	28,486	51.4	75.7	91.6
Potrero	11	75,776	1,709	44.3	38.0	85.8	9	73,438	1,475	49.8	50.1	89.1
Richfield	241	1,403,784	35,265	39.8	12.3	80.8	255	1,520,878	40,755	37.3	15 6	86.9
Rosecrans	69	483,810	10,607	45.6	58.7	84.9	74	549,550	12,504	43.9	52.9	91.8
Salt Lake	8	48,725	1,396	34.9	143.0	96.4	8	49,910	1,402	35.6	150.0	95.2
Santa Fe Springs	542	7,531,594	83,441	90.3	76.5	85.1	511	7,093,458	79,823	88.9	78.3	84.9
Seal Beach	114	1,911,452	16,287	117.4	188.8	78.9	108	1,593,335	15,416	103.4	188.1	77.6
Torrance	468	1,200,048	77,066	15.6	4.8	91.0	493	1,293,455	84,316	15.3	5.2	92.9
Whittier	161	200,590	27,184	7.4	17.4	93.3	161	190,659	27,172	7.0	15.8	91.7
Los Angeles County							2	6,987	170	41.1	0.0	46.2
Totals	4,350	42,884,263	675,480	63.5	53.9	85.8	4,424	43,304,469	707,730	61.2	55.2	86.9
Dist. 2—Bardsdale	102	79,813	15,468	5.2	1.2	83.8	100	82,127	17,230	4.8	1.0	93.6
Conejo	30	841	5,430	0.2	0.8	100.0	31	950	5,704	0.2	0.8	100.0
Ojai	58	27,993	5,678	4.9	5.5	54.1	61	29,911	10,623	2.8	4.1	94.6
Piru	75	80,920	12,165	6.7	9.1	89 6	79	88,788	13,253	6.7	8.0	91.2
Rincon	34	423,853	5,052	83.9	31.2	82.1	32	382,878	4,293	89.2	31.0	73.1
Santa Paula	41	21,769	5,373	4.1	4.9	72.4	45	22,074	6,114	3.6	4.2	73.8

Sespe	19	43,732	2,482	17.6	0.8	72.2	20	54,084	3,191	16.9	1.0	86.7
Simi	53	22,387	9,436	2.4	0.6	98.4	54	22,181	9,703	2.3	0.6	97.7
South Mountain	75	324,126	9,802	33.1	1.1	72.2	79	399,432	12,518	31.9	0.8	86.1
Ventura	196	5,287,882	28,823	183.5	25.4	81.2	185	4,611,709	27,594	167.1	24.3	81.1
Totals	683	6,313,316	99,709	63.3	11.0	80.7	686	5,694,234	110,223	51.7	9.3	87.3
Dist. 3—Arroyo Grande	12	21,443	1,952	11.0	8.3	89.9	15	19,241	2,163	8.9	11.6	78.4
Capitan	7	72,493	775	93.5	24.8	61.2	10	121,721	1,238	98.3	8.1	67.3
Casmalia	9	45,982	1,116	41.2	32.6	68.5	10	37,390	1,116	33.5	42.3	60.7
Cat Canyon	5	79,267	907	87.4	20.4	100.0	5	75,779	700	108.3	23.7	76.1
Elwood	50	2,182,726	5,814	375.4	80.2	64.2	45	1,929,850	5,434	355.1	100.3	65.6
Elwood	[2]1	0	0	0	0	0	[2]1	0	0	0	0	0
La Goleta Gas	[2]4	0	0	0	0	0	[2]4	0	0	0	0	0
Lompoc	1	15,860	136	116.6	54.3	75.1	4	34,481	458	73.3	67.9	62.2
Mesa	16	114,432	2,384	48.0	77.8	82.3	31	454,344	3,964	114.6	59.4	69.5
Santa Maria	144	716,275	20,073	35.7	35.3	77.0	145	745,784	21,085	35.4	38.8	79.0
Sargent	8	4,363	1,344	3.2	0	92.8	8	4,284	1,267	3.4	0	86.1
Summerland	19	10,541	2,722	3.9	12.4	79.2	19	9,637	3,201	3.0	9.6	91.6
Santa Barbara County							1	1,558	31	50.3	16.5	16.8
Totals	271	3,263,382	37,223	87.7	40.1	75.9	293	3,434,069	40,657	84.5	43.3	75.4
Dist. 4—Belridge	158	1,561,969	24,836	62.9	11.3	86.8	179	1,356,166	28,574	47.5	10.9	86.8
Buttonwillow Gas	0	0	0	0	0	0	0	0	0	0	0	0
Devils Den	6	3,275	895	3.7	0.5	82.4	1	5,259	125	42.1	7.9	67.9
Edison	3	31,278	330	94.8	2.2	60.8	7	129,265	754	171.4	5.7	58.5
Elk Hills	202	1,846,637	31,054	59.5	81.9	84.9	181	1,496,328	25,912	57.7	101.1	77.8
Elk Hills							[2]1	0	0	0	0	0
Fruitvale	64	686,341	9,150	75.0	8.9	79.0	67	674,508	9,139	73.8	9.3	74.1
Kern River	1,253	1,745,382	197,991	8.8	17.0	87.3	1,399	1,959,257	232,107	8.4	17.0	90.2
Lost Hills	304	619,621	33,134	18.7	26.7	60.2	335	834,015	51,192	16.3	36.4	83.0
McKittrick-Temblor	205	549,478	31,834	17.3	95.8	85.8	200	547,625	34,641	15.8	95.9	94.1
Midway-Sunset	2,529	9,836,323	380,404	25.9	27.2	83.1	2,582	9,887,655	397,525	24.9	27.6	83.7
Midway-Sunset	[2]10	0	0	0	0	0	[2]8	0	0	0	0	0
Mt. Poso	129	1,564,510	16,977	92.2	86.8	72.7	144	1,879,355	19,137	98.2	84.9	72.2
Mountain View	12	901,504	1,966	458.5	1.9	90.5	38	1,701,366	5,773	294.7	5.1	82.6
Poso Creek							6	46,439	682	68.1	8.0	61.8
Round Mountain	47	936,698	7,179	130.5	168.2	84.4	55	867,112	7,726	112.2	153.9	75.3
Wheeler Ridge	34	79,094	5,978	13.2	2.8	97.1	34	77,034	6,128	12.6	3.1	98.0
Kern County	0	0	0	0	0	0	0	0	0	0	0	0
Tulare County	[2]2	1,278	153	8.4	24.4	42.3	[2]1	537	92	5.8	21.7	50.0
Totals	4,948	20,363,388	741,881	27.4	31.4	82.8	5,229	21,461,921	819,507	26.2	31.7	85.2

TABLE G. Production Statistics and Operating Data of California Oil Fields—1934—Continued

Field	January 1 to June 30						July 1 to December 31					
	Average number of producing wells—actual	Oil (bbls.)	Number of days producing	Production per well per day (bbls.)		Percentage of time wells produced	Average number of producing wells—actual	Oil (bbls.)	Number of days producing	Production per well per day (bbls.)		Percentage of time wells produced
				Oil	Water					Oil	Water	
Dist. 5—Coalinga	900	3,091,518	135,348	22.8	16.5	83.1	960	3,516,143	153,863	22.9	15.2	87.1
Kettleman Middle Dome	1	53,331	176	303.0	96.5	97.2	2	74,509	262	284.4	100.3	71.2
Kettleman North Dome	62	9,998,186	8,559	1,168.1	71.4	76.3	79	11,267,457	10,314	1,092.4	78.7	71.0
Kings County: Dudley Ridge	[2]1	0	0	0	0	0	[2]1	0	0	0	0	0
Totals	963	13,143,035	144,083	91.2	19.9	82.7	1,041	14,858,109	164,439	90.4	19.3	85.8
Grand totals	11,215	85,967,384	1,698,376	50.6	38.4	83.7	11,673	88,752,802	1,842,556	48.2	38.5	85.8
The exact production for some wells could not be obtained and the following estimates were incorporated in the above figures:												
Dist. 1—Huntington Beach	----------	----------	----------	----------	----------	----------	1	3,767	228	----------	----------	----------
Long Beach	----------	----------	----------	----------	----------	----------	5	26,590	747	----------	----------	----------

[1] Two wells producing a total of 153 days.
[2] Gas wells omitted from totals.
[3] Estimated.
[4] Two wells producing a total of 92 days.

CHAPTER THREE

METALS

Bibliography: Reports of State Mineralogist I–XXXI (inc.). Bulletins 5, 6, 18, 23, 27, 36, 50, 57, 76, 78, 85, 92, 95, 108. Spurr and Wormser, "Marketing of Metals and Minerals." See also under each metal.

The total value of metals produced in California during 1934 was $26,616,143. Chief among these is and always has been gold; followed by silver, quicksilver, tungsten ore, iron ore, copper, zinc, lead, platinum.

A comparison of the 1933 output with that of the 1934 output is afforded by the following table:

Substance	1933		1934		Increase+ Decrease— Value
	Amount	Value	Amount	Value	
Chromite	*	*	294 tons	$3,498	*—
Copper	997,511 lbs.	$63,521	590,638 lbs.	47,252	$16,269—
Gold	613,579 fine ozs.	15,683,075	719,084 fine ozs.	25,131,284	9,448,209+
Lead	772,463 lbs.	28,583	804,911 lbs.	29,782	1,199+
Platinum metals	237 ozs.	7,255	520 ozs.	14,884	7,629+
Quicksilver	4,102 flasks	229,472	7,946 flasks	534,135	304,663+
Silver	402,591 fine ozs.	140,907	844,413 fine ozs.	545,883	404,976+
Tungsten	148 tons	76,605	261 tons	224,417	147,812+
Zinc	209,222 lbs.	12,189	721,719 lbs.	31,034	18,845+
Unapportioned		[a]14,710		[b]53,974	39,264+
Totals		$16,256,317		$26,616,143	
Net increase					$10,359,826+

* Included under 'Unapportioned.'
[a] Includes chromite and molybdenum ore.
[b] Includes iron ore, manganese ore, and molybdenum ore.

ALUMINUM

Bibliography: Report XVIII, p. 198. Bulletins 38, 67. U. S. Geol. Surv., Min. Res. of U. S.

To date there has been no commercial production of aluminum ore in California. Only a single authenticated occurrence of bauxite has thus far been noted in this state, being in Riverside County, southeast of Corona, but as yet undeveloped.

ANTIMONY

Bibliography: State Mineralogist Reports VIII, X, XII–XV (inc.), XVII, XXII, XXIII, XXV–XXVII (inc.). Bulletins 38, 91.

During 1934 there were no shipments of antimony ore in California. The principal commercial production of antimony in California has come from Kern, Inyo and San Benito counties, and other occurrences have been noted in Nevada, Riverside, San Bernardino and Santa Clara counties. The commonest occurrence is in the form of the sulphide,

stibnite; but in the Kernville and Havilah districts in Kern County there were notable deposits of the native metal, being among the few localities of the world where native antimony has been found.

Present New York quotations (Aug. 8, 1935) are around 12¼¢ per pound for Chinese (duty paid) and American spot antimony.

Antimony Production in California, by Years.

The production of antimony ore in California by years since 1887 has been as follows:

Year	Tons	Value	Year	Tons	Value
1887	75	$15,500	1902		
1888	100	20,000	1915	510	$35,666
1889			1916	1,015	64,793
1893	50	2,250	1917	158	18,786
1894	150	6,000	1918		
1895	33	1,485	1925	*26	770
1896	17	2,320	1926		
1897	20	3,500	1927	20	590
1898	40	1,200	1928	20	761
1899	75	13,500	1929		
1900	70	5,700			
1901	50	8,350	Totals	2,429	$201,171

* Annual details concealed under 'Unapportioned.'

ARSENIC

Bibliography: Reports XVIII, XXIII, XXV, XXX. Bulletin 67. U. S. G. S., Min. Res. of U. S.

Arsenic is found in a number of localities in California in the mineral arsenopyrite (FeAsS), which is frequently gold bearing; and in scorodite ($FeAso_4+2H_2O$), an oxidation product of arsenopyrite. The occurrence of realgar (AsS) has also been noted.

Except for a small output in 1924, there has been no commercial recovery of arsenic from California ores. There having been only a single operator, the figures are concealed under the 'Unapportioned' item.

BERYLLIUM

Bibliography: State Mineralogist Report XXVII. Eng. & Min. Jour.-Press, Vol. 118, No. 8, p. 285, Aug. 23, 1924. U. S. Bureau of Mines Information Circular 6190.

Beryllium is a metal resembling aluminum closely in its chemical character. It has a specific gravity of 1.85, is almost as hard as quartz (will scratch glass) and will take a high polish. The use of beryllium as a metal is still more or less in the experimental stage because the cost of extracting the metal from its ores almost makes it prohibitive and the present sources of supply of the ore are limited. Not until such a time when deposits can be found that will assure a definite supply and metallurgical costs are such as to justify its use, will the metal be found in common use.

There are a number of beryllium minerals, but none have been found in commercial quantities, except beryl, which is a beryllium-aluminum silicate. The chief use at present for ground beryl is as an addition to porcelain products, where it reduces the coefficient of expansion. Beryllium metal is difficult to separate from aluminum.

Present (Aug. 1, 1935) quotations for beryllium ore are per ton in carload lots, minimum 10 per cent BeO $30; minimum 12 per cent BeO, $35, f.o.b. mine.

Beryl occurs in California in the pegmatite dikes of the tourmaline gem district in northern San Diego and southwestern Riverside counties; and an occurrence has recently been noted in western Inyo County, but the quantity is as yet unproved. Thus far there have been no commercial shipments of beryl from California except for gem purposes (the pink and aquamarine varieties).

BISMUTH

Bibliography: Bulletins 38, 67, 91. Am. Jour. Sci., 1903, Vol. 16.

Several bismuth minerals have been found in California, notably native bismuth and bismite (the ochre) in the tourmaline gem district in San Diego and Riverside counties near Pala. Other occurrences of bismuth minerals, including the sulphide, bismuthinite, have been noted in Inyo, Fresno, Nevada, Tuolumne, San Bernardino, and Mono counties, but only in small quantities. The only commercial production recorded was 20 tons valued at $2,400 in 1904, and credited to Riverside County.

Present quotations (Aug. 1, 1935) for bismuth are around 90¢ per pound, in ton lots for the refined metal.

CADMIUM

Bibliography: U. S. Geol. Surv., Min. Res. of U. S., 1908, 1918.

During 1917 and 1918, cadmium metal was recovered by the electrolytic zinc plant of the Mammoth Copper Company in Shasta County. It was shipped in the form of 'sticks' and amounted to a total of several thousand pounds for the two years, the exact figures being concealed under 'Unapportioned.' That was the first, and thus far the only, commercial production of cadmium recorded from Californian ore. Cadmium occurs there associated with zinc sulphide, sphalerite. Cadmium also occurs in the Cerro Gordo Mines, Inyo County, associated with smithsonite (zinc carbonate).

Present quotations (Aug. 1, 1935) for cadmium are 65¢ per pound for the refined metal.

CHROMITE

Bibliography: State Mineralogist Reports IV, XII, XIII, XIV, XV, XVII, XVIII, XXI–XXIX (inc.). Bulletins 38, 76, 91. Preliminary Report 3. U. S. G. S., Bull. 430. Min. & Sci. Press, Vol. 114, p. 552.

During the year 1934 there were shipments of chromite in California amounting to 294 short tons carrying 45% Cr_2O_3, worth $3,498. The 1933 output was placed in the 'Unapportioned' item to conceal the production of either producer of that year. The 1933 shipments were the largest in volume since 1920.

Occurrence.

Chromite is widely distributed in California, the principal production, thus far, having come from El Dorado, San Luis Obispo, Del Norte, Shasta, Siskiyou, Placer, Fresno, and Tuolumne counties. In 1918 a total of 29 counties contributed to the State's output. There are two main belts in California yielding this mineral, one along the Coast Ranges from San Luis Obispo County to the Oregon line, including the Klamath Mountains at the north end, and the other in the Sierra Nevada from Tulare County to Plumas County. Chromite occurs as lenses in basic igneous rocks such as peridotite and pyroxenite, and in serpentines which have been derived by alteration of such basic rocks.

Imports.

Imports of foreign chromite [1] duty free, mainly from Rhodesia, New Caledonia and India, totaled 190,797 long tons valued at $2,250,787 for the year 1934, compared with 116,511 tons worth $1,426,450 in 1933.

Total Chromite Production of California.

Production of chromite in California began, apparently, about 1874, principally in San Luis Obispo County. There was considerable activity from 1880 to 1883, inclusive, and a total of 23,238 long tons (or 26,028 short tons), valued at $329,924, was shipped from that county up to the beginning of 1887. Some ore also was shipped from the Tyson properties in Del Norte County. The tabulation herewith shows the output of chromite in California, annually, including the earliest figures so far as they are available. The figures from 1887 to date are from the records of the State Mining Bureau:

Year	Tons	Value	Year	Tons	Value
1874–1876 (San Luis Obispo County)	26,028	$329,924	1911	935	$14,197
1887	3,000	40,000	1912	1,270	11,260
1888	1,500	20,000	1913	1,180	12,700
1889	2,000	30,000	1914	1,517	9,434
1890	3,599	53,985	1915	3,725	38,044
1891	1,372	20,580	1916	48,943	717,244
1892	1,500	22,500	1917	52,379	1,130,298
1893	3,319	49,785	1918	73,955	3,649,497
1894	3,680	39,980	1919	*4,314	97,164
1895	1,740	16,795	1920	1,770	43,031
1896	786	7,775	1921	347	6,870
1897	----------	----------	1922	379	6,334
1898	----------	----------	1923	84	1,658
1899	----------	----------	1924	350	6,700
1900	140	1,400	1925	191	3,712
1901	130	1,950	1926	393	7,063
1902	315	4,725	1927	225	5,063
1903	150	2,250	1928	729	15,179
1904	123	1,845	1929	327	5,025
1905	40	600	1930	84	1,905
1906	317	2,859	1931	441	6,737
1907	302	6,040	1932 [a]	1,206	16,587
1908	350	6,195	1933 [a]		
1909	436	5,309	1934	291	3,498
1910	749	9,707	Totals	246,616	$6,483,954

* Recalculated to 45% Cr_2O_3, beginning with 1919.
[a] Annual details concealed under 'Unapportioned.'

[1] Monthly Summary of Foreign Commerce of U. S. Bureau of Foreign and Domestic Commerce, Dec., 1934.

COBALT

Bibliography: Report XIV. Bulletins 67, 91. U. S. G. S., Min. Res. of U. S., 1912, 1918. U. S. B. M., I. C. 6331.

Occurrences of some of the cobalt minerals have been noted in several localities in California, but to date no commercial production has resulted. Some of the copper ores of the foothill copper belt in Mariposa and Madera counties have been found to contain cobalt up to 3%.

The nominal quotation for cobalt is around $2.50 per pound for the refined metal—35% for cash.

COPPER

Bibliography: State Mineralogist Reports VIII–XXX (inc.). Bulletins 23, 50, 91.

The output of copper in California during 1934 amounted to a total of 590,638 pounds of recoverable metal valued at $47,252. This was a decrease in both quantity and value as compared with the 1933 production which was 992,515 pounds worth $63,521. The average price of copper in 1934 was 8.0¢ per pound compared with 6.4¢ in 1933; 6.3¢ in 1932; 9.1¢ in 1931; 13.0¢ in 1930; and 17.6¢ in 1929.

Copper was second to gold among the metals in California from 1896 to 1932, when it was passed in value of output by quicksilver and silver, and in 1933 also by tungsten.

The distribution of the 1934 output of copper in California by counties was as follows:

County	*Pounds*	*Value*
Amador	7,254	$580
Butte	1,805	144
El Dorado	4,312	345
Inyo	33,363	2,669
Kern	5,502	440
Mariposa	1,771	142
Nevada	113,771	9,102
Placer	1,953	156
Riverside	1,606	128
San Bernardino	25,606	2,048
Shasta	388,775	31,102
Alpine, Calaveras, Fresno, Imperial, Lassen, Los Angeles, Modoc, Mono, Plumas, Sacramento, San Diego, Sierra, Siskiyou, Trinity, Tulare, Yuba *	4,920	396
Totals	590,638	$47,252

* Combined to conceal the output of individual producers in each.

According to preliminary data issued by the U. S. Bureau of Mines [1] the smelter production of primary copper from domestic sources during 1934 amounted to 488,454,107 pounds, an increase of approximately 9 per cent compared with 1933 output. The value increased approximately 36 per cent in 1934. The average price of copper delivered during the year, as reported to the U. S. Bureau of Mines by selling agents, was 8.0¢ per pound.

Copper Production of California, by Years.

Although some mining of copper ores in a small way had been done earlier, shipments in appreciable quantities began in 1861 and continued of importance up to the end of 1867, when a total of 68,631 tons

[1] U. S. Bureau of Mines, Mineral Market Report, M. M. S. 347, May 28, 1935.

(of 2376 pounds) of high-grade ores, and 847 tons of matte or 'regulus'[1] had been shipped to smelters at New York, Boston, and Swansea, Wales. The most important district at that time was Copperopolis and vicinity in Calaveras County, with some shipments also made from Mariposa, El Dorado, Fresno and San Luis Obispo counties. From 1868 to 1882, the output was insignificant. There are wide discrepancies in the figures currently recorded for copper production previous to 1882, in which year the data of the U. S. Geological Survey began. The detailed statistics of the California State Mining Bureau began in the year 1894.

Amount and value of copper production in California annually since 1882 is given in the following tabulation:

Copper Production of California, by Years

Year	Pounds	Value	Year	Pounds	Value
1882	826,695	$144,672	1910	53,721,032	$6,680,641
1883	1,600,862	265,743	1911	36,838,024	4,604,753
1884	876,166	120,911	1912	34,169,997	5,638,049
1885	469,028	49,248	1913	34,471,118	5,343,023
1886	430,210	43,021	1914	30,491,535	4,055,375
1887	1,600,000	192,000	1915	40,968,966	7,169,567
1888	1,570,021	235,303	1916	55,809,019	13,729,017
1889	151,505	18,180	1917	48,534,611	13,249,948
1890	23,347	3,502	1918	47,793,046	11,805,883
1891	3,397,405	424,675	1919	22,162,605	4,122,246
1892	2,980,944	342,808	1920	12,947,299	2,382,303
1893	239,682	21,571	1921	12,088,053	1,559,358
1894	738,594	72,486	1922	22,883,987	3,090,582
1895	225,650	21,901	1923	28,346,860	4,166,989
1896	1,992,844	199,519	1924	52,089,349	6,823,704
1897	13,638,626	1,540,666	1925	46,968,499	6,669,527
1898	21,543,229	2,475,168	1926	33,521,544	4,693,014
1899	23,915,486	3,990,534	1927	27,350,316	3,582,888
1900	29,515,512	4,748,242	1928	25,162,304	3,623,360
1901	34,931,788	5,501,782	1929	33,809,258	5,941,799
1902	27,860,162	3,239,975	1930	26,534,752	3,449,522
1903	19,113,861	2,520,997	1931	12,954,842	1,178,890
1904	29,974,154	3,969,995	1932	1,417,536	89,307
1905	16,997,489	2,650,605	1933	992,515	63,521
1906	28,726,448	5,522,712	1934	590,638	47,252
1907	32,602,945	6,341,387			
1908	40,868,772	5,350,777	Totals	1,145,156,866	$182,247,040
1909	65,727,736	8,478,142			

GOLD

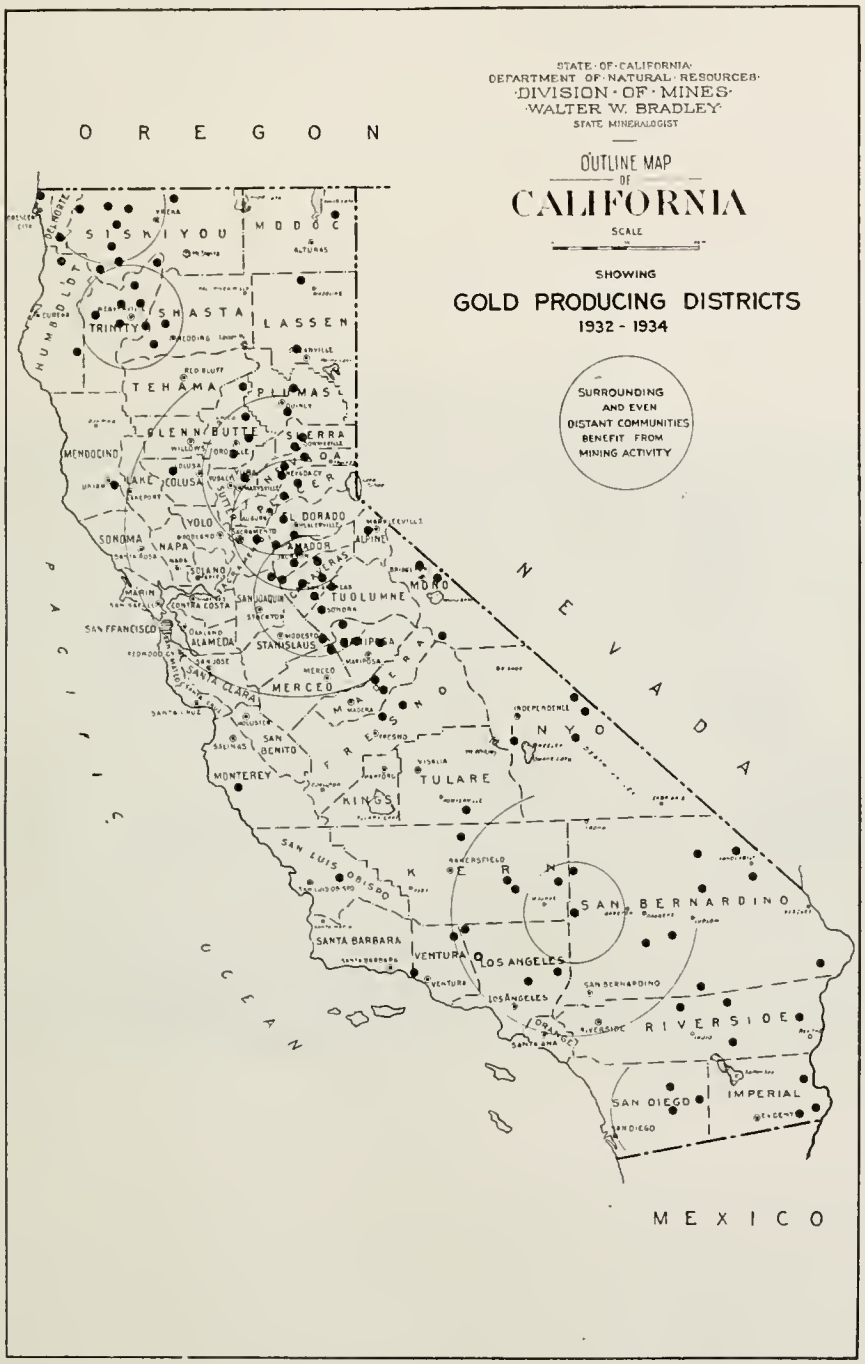
Bibliography: State Mineralogist Reports I to XXXI (inc.), (except III and VIII). Bulletins 36, 45, 57, 91, 92, 95, 108. U. S. Geol. Surv., Prof. Paper 73. U. S. Bur. of Mines, Econ. Paper 3 (1929).

Gold was first, and, for many years, the most important single mineral product of California. Although now surpassed for a number of years in annual value by petroleum, and by natural gas beginning with 1923 to 1932, it still heads our metal list, and California continues to outrank all the other gold-producing States of the United States, including Alaska. In fact, at present, California is producing approximately 24% of the gold mined in the entire United States.

There has been a steady increase in the development of both lode and placer mines in California during the last four or five years, brought about by the present economic conditions. During 1934 there were

[1] Brown, J. Ross, Mineral Resources West of the Rocky Mountains, p. 168, 1867.

2651 operators in California, not including snipers, prospectors and various individuals, selling gold in small lots to the bullion dealers. There was no premium paid on gold during 1932, the price being $20.67 a fine ounce. On August 29, 1933, there was an executive order lifting the embargo on gold ores, concentrates, precipitates, and unretorted amalgam, followed on October 25, 1933, by another order instruc-

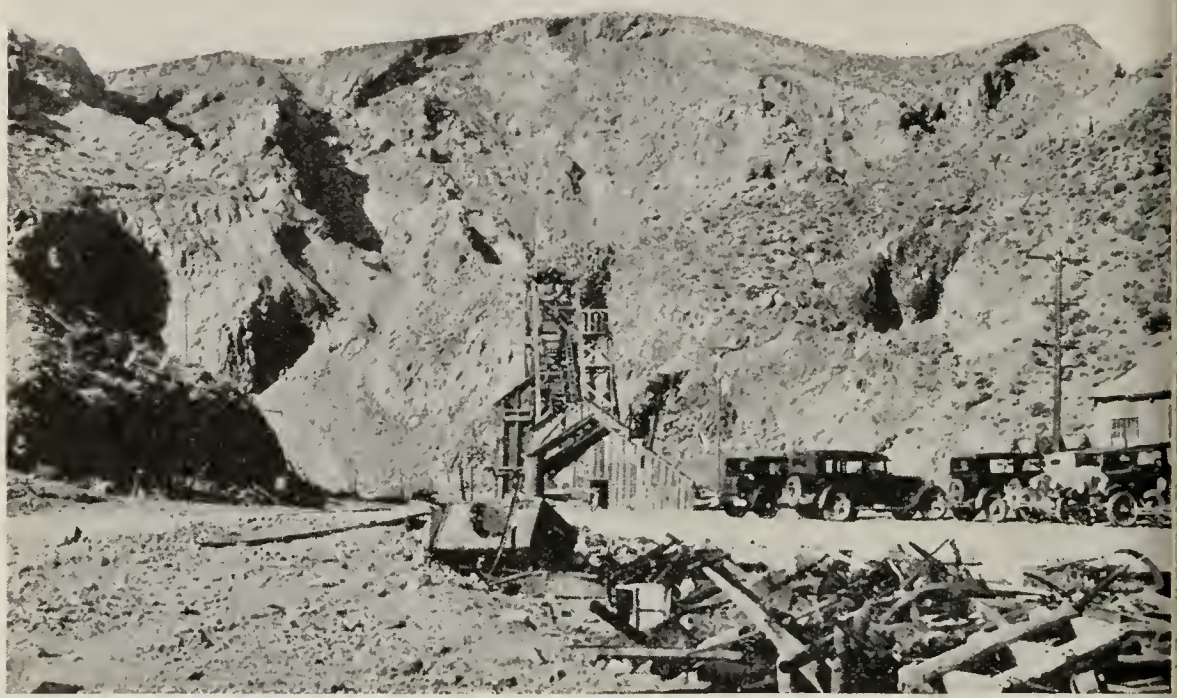


ing the Reconstruction Finance Corporation to buy newly-mined gold at a price fixed by the U. S. Treasurer which corresponded to the world price, all of which had an effect on the 1933 gold yield. On January 30, 1934, the Gold Reserve Act of 1934 was passed, followed by the President's proclamation of January 31, 1934, which fixed the weight of the gold dollar at 15 5/21 grains, nine-tenths fine. The value of gold thereby became $35 a fine ounce. The average weighted value of

gold per fine ounce in 1934 was $34.95. The production of gold in California during 1934 totaled 719,083.92 fine ounces worth $25,131,284, being an increase of 106,485.07 fine ounces over the 1933 yield. The deep or lode mines accounted for 445,039.09 fine ounces worth $15,554,116, and the placers (mainly dredges) produced 274,024.83 fine ounces worth $9,577,168.

As the Division of Mines has never independently gathered the statistics of gold and silver production, these figures, as in former years, are published by cooperation with and through the courtesy of F. W. Horton and H. M. Gaylord of the Division of Mineral Statistics, U. S. Bureau of Mines.

The largest production in 1934 was reported from Nevada County with an output of 203,678.13 fine ounces ($7,116,551); Sacramento



Glory hole at the Rand level of the Yellow Aster Mine, at Randsburg, Kern County.

Cut by courtesy of Engineering and Mining Journal.

County second with 101,730.14 fine ounces ($3,555,468); Amador County third with 65,072.24 fine ounces ($2,274,275); Yuba County fourth with 54,705.58 fine ounces ($1,911,960); followed in turn by El Dorado, Calaveras, Shasta, Kern counties each of which had a production exceeding a million dollars.

Nevada held the first place as a gold producing county with an output exceeding that of Yuba or Amador which held first and second places respectively in 1928 with Sacramento fourth that year. Sacramento held second place since 1931, its output exceeding that of Amador, which held second place in 1930. The gold from Yuba and Sacramento comes almost entirely from dredges, while that from Nevada and Amador counties comes mainly from the lode mines.

Distribution of the 1934 gold output by counties was as follows:

County	Number of operators[a] Lode	Placer	Value
Alpine	3	---	$3,726
Amador	44	62	2,274,275
Butte	23	76	544,000
Calaveras	46	103	1,274,862
Colusa	1	---	477
Del Norte	1	9	8,078
El Dorado	50	88	1,380,710
Fresno	8	24	24,066
Humboldt	---	26	28,978
Imperial	4	11	9,973
Inyo	57	14	266,109
Kern	122	116	1,021,849
Kings	2	---	694
Lassen	3	1	14,689
Los Angeles	9	44	57,924
Madera	9	28	13,163
Mariposa	51	88	517,443
Merced	---	17	598,695
Modoc	3	1	6,323
Mono	11	2	56,092
Monterey	1	3	517
Nevada	45	115	7,118,551
Orange	---	4	572
Placer	29	103	547,892
Plumas	15	111	153,056
Riverside	28	15	41,899
Sacramento	3	24	3,555,468
San Bernardino	87	41	301,994
San Diego	8	10	25,514
San Joaquin	---	5	1,133
San Luis Obispo	1	3	1,946
Santa Cruz	---	2	130
Shasta	29	62	718,583
Sierra	29	129	1,027,582
Siskiyou	39	130	528,395
Stanislaus	1	24	239,158
Tehama	---	---	1,146
Trinity	27	120	574,681
Tulare	3	3	5,114
Tuolumne	59	82	269,256
Ventura	3	4	4,435
Yolo	---	1	176
Yuba	13	83	1,911,960
Totals	867	1,784	$25,131,284

The following is quoted from the advance statement of gold in 1934 by courtesy of the U. S. Bureau of Mines,[b] Department of Commerce:

"*Gold.*—In 1934 California produced 719,063.92 fine ounces of gold, an increase of 105,485.07 ounces (17 per cent) over 1933, and maintained its position as the leading gold-producing State, exceeding both Alaska and South Dakota in output. The value of the gold produced was $25,131,284 in 1934 compared with $15,683,075 in 1933, an increase of $9,448,209 (60 per cent). Approximately 62 per cent of the total gold in 1934 came from lode mines and 38 per cent from placers. Nevada and Sacramento counties each produced more than 100,000 ounces and were followed in order of output by Amador, Yuba, El Dorado, Calaveras, Sierra, and Kern counties, each with a yield of over 29,000 ounces; these eight counties produced 559,807 ounces (78 per cent) of the state total. The major increases in the state in county output were: Nevada County, 20,722 ounces (11 per cent); Calaveras, 19,146 ounces (110 per cent); El Dorado, 18,342 ounces (87 per cent); Kern, 12,634 ounces (76 per cent); Sierra, 11,988 ounces (69 per cent) and Yuba, 10,971 ounces (25 per cent). The only counties in which production dropped appreciably were: Sacramento, 15,510 ounces (13 per cent); Amador, 11,033 (14 per cent); and Shasta, 3629 (15 per cent). The five Mother Lode counties—Amador, Calaveras, El Dorado, Mariposa, and Tuolumne—contributed 163,564 ounces (23 per cent) of the State total.

"In 49 of the lode mines and 21 placers producing more than 1,000 ounces of gold each, 32 lodes and 14 placers each produced 1,000 to 5,000 ounces, 9 lodes and 4 placers 10,000 to 20,000 ounces, 2 lodes and 1 placer 20,000 to 50,000 ounces and 1 lode and 2 placers more than 50,000 ounces; these 70 mines produced 597,431 fine ounces of gold 388,921 ounces from lode mines and 208,510 ounces from placers and accounted for 83 per cent of the total State. In 1933 only 27 lode mines and 15 placers produced more than 1,000 ounces each; and their total yield of

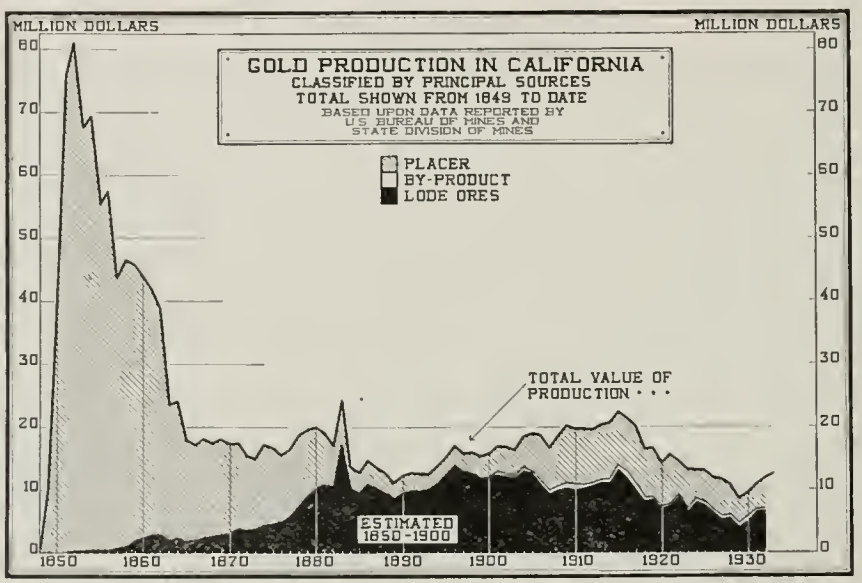
[a] Number does not include snipers, prospectors and various individuals selling small lots to bullion dealers.

[b] U. S. Bureau of Mines, Mineral Yearbook, 1934–35, pp. 149–151.

521,819 ounces 310,916 ounces from lode mines and 210,903 ounces from placers, accounted for 85 per cent of the State total.

"The yield of lode gold was 445,039 ounces in 1934 compared with 352,200 ounces in 1933, an increase of 92,839 ounces (26 per cent). The largest production was from Nevada County (195,059 ounces); next in order were Amador (59,218 ounces), El Dorado (32,958 ounces), Kern (28,294 ounces), and Sierra (26,143 ounces). The following 20 companies (or mines), virtually all old established operators produced 75 per cent of the total lode gold and 46.5 per cent of the total gold output of the State in 1934; listed in order of output, they were as follows: Empire Star Mines Co., Ltd. (Nevada County), Idaho-Maryland Mines Co. (Nevada County), The Argonaut Mining Co., Ltd. (Amador County), Carson Hill Gold Mining Corporation (Calaveras County), The Mountain Copper Co., Ltd. (Shasta County), Original Sixteen to One Mine, Inc. (Sierra County), Kennedy Mining & Milling Co. (Amador County), Montezuma Apex Mining Co. (El Dorado County), Central Eureka Mining Co. (Amador County), Central Tailings Co. (Amador County), Golden Center Mine (Nevada County), Beebe Gold Mining Co. (El Dorado County), Lava Cap Gold Mining Corporation (Nevada County), Pacific Mining Co. (Mariposa County), Spanish Mining Co. (Nevada County), Middle Fork Gold Mining Co. (El Dorado County), Silver Queen Mining Co. (Kern County), Kenton Mine (Sierra County), Cardinal Gold Mining Co. (Inyo County), and King Solomon Mines Co. (Siskiyou County). The continued increase in the average price of gold transformed much vein material too low in grade to be commercial ore heretofore into payable reserves which in many instances were increased further by active development work.

"Production of gold by dredging in 1934 totaled 194,051.48 fine ounces approximately 27 per cent of the total gold output of the State and 7,658.84 ounces (4 per cent) less than the dredge yield in 1933. The Natomas Co. with 6 dredges in the Folsom district (Sacramento County), the Yuba Consolidated Gold Fields



Cut by courtesy of California State Chamber of Commerce.

with 5 dredges in the Yuba River district (Yuba County), and 1 dredge in the Snelling district (Merced County), and the Capital Dredging Co. with 3 dredges in the Folsom district (Sacramento County) were the largest operators and produced over three fourths of the total dredge output. Each of the following companies or individuals, also listed in order of output, operated a single dredge: Snelling Gold Dredging Co., Snelling, Merced County; Gold Hill Dredging Co., Folsom City, Sacramento County; La Grange Gold Dredging Co., La Grange, Stanislaus County; Trinity Dredging Co., Lewiston, Trinity County; Lancha Plana Gold Dredging Co. in Amador County near Camanche; Oroville Gold Dredging Co., Oroville, Butte County; Gold Bar Dredging Co., Lewiston, Trinity County; Canyon Creek Dredge (J. E. Croudace, trustee), Georgetown, El Dorado County; Cal Oro Dredging Co., Yreka, Siskiyou County; Sierra Gold Dredging Co., Stanfield Hill property, Yuba County; Oro Bell Dredging Co., Loomis, Placer County; M. D. Baker, Igo, Shasta County; Lloyd B. Onyett Dredging Co., Palermo, Butte County; Allen Placers, Inc., Burson, Calaveras County; and Charles Staheli, Cottonwood, Shasta County. Altogether 18 companies and individuals operated 30 dredges and handled 59,260,208 cubic yards of gravel with an average recovery of 0.00327 ounce of fine gold per cubic yard. Although there was a slight decrease in 1934, in the quantity of gold produced by dredging the value of the output increased $1,626,383 (31.5 per cent); 3 more companies and 5 more dredges were in operation than in 1933. The increase in price of gold notably extended the areas that may be dredged profitably, and at the close of the year several new dredges were being built and much ground was being prospected to determine its suitability for dredging.

"The output from drift placers was 12,992.78 fine ounces of gold (1.8 per cent of the State total gold) in 1934 compared with 16,981.08 ounces in 1933, a decrease of 3,988.30 ounces (23.5 per cent). The largest producing drift placers, in order of output, were: Calaveras Central 1 mile northeast of Angels Camp, Calaveras County; Vallecito Western 3 miles east of Angels Camp, Calaveras County; Lloyd

5 miles west of San Andreas, Calaveras County; Golden River near Angels Camp, Calaveras County; Golden Bear near Alleghany, Sierra County; and the Bunker Hill 14 miles northeast of La Porte, Plumas County. These 6 mines produced a total of 8,179.90 ounces of gold.

"Hydraulic mining yielded 9,281.75 fine ounces of gold (1.3 per cent of the State total gold) compared with 4,494.94 ounces in 1933, an increase of 4,786.81 ounces (106.5 per cent). It can be carried on successfully in California only in limited areas because of many restrictions as to tailings disposal. The leading producers of gold by hydraulicing were: You Bet mine, 13 miles east of Grass Valley, Nevada County; Red Hill mine 2 miles west of Junction City, Trinity County; Canyon placers on Canyon Creek near Dedrick, Trinity County; Paragon mine 2 miles northeast of Forest-hill, Placer County; and Omega mine 3 miles southeast of Washington, Nevada County. These 5 mines yielded a total of 5,467.65 ounces of gold.

"A total of 34,888 fine ounces of gold (5 per cent of the State total) can not be traced to individual properties but can be traced to the districts or counties from which it came. The major part of this gold was derived by itinerant miners; from small-scale placer operations; some was from pocket hunting and formed a part of that purchased by 136 bullion dealers in the State, including banks, merchants and private refiners licensed by the State Mineralogist of California under the Ore Buyers' License Act commonly known as the High-Grade Bill. Most of the placer gold purchased by licensed bullion buyers came from the following localities: Cosumnes River, El Dorado and Amador counties; Feather River and its tributaries, Butte and Plumas counties; Big Butte Creek, Butte County; Mokelumne River, Amador and Calaveras counties; Big Canyon and Webber Creeks, El Dorado County: Bull Creek, Mariposa County; Yuba River and Deer Creek, Nevada County; American River and its North and Middle Forks and Blue Canyon and Indian Creeks, Placer County; Black Hawk, Nelson, Rush, Sloat, Spanish, and Squirrel creeks, Plumas County; Klamath and Salmon rivers and their tributaries, Siskiyou County; Sacramento River and its tributaries (Beegum, Clear and Cottonwood creeks), and French Gulch, Shasta County; Trinity River and its tributaries, Trinity County; and Stanislaus and Tuolumne rivers and Woods Creek, Tuolumne County. Some of the gold purchased was recovered from beach sands in Humboldt, Monterey, and Santa Cruz counties, and small quantities were derived from San Gabriel and San Francisquito canyons, Los Angeles County."

Total Gold Production of California.

The presence of gold in stream gravels near Los Angeles was known and worked in a small way by the Indians, at least as early as 1841,[1] and possibly 1820.[2] On March 2, 1844, Don Manuel Castanares, deputy for California to the Congress of Mexico, reported[3] to his government that placers near Los Angeles had produced up to December, 1843, a total of 2000 ounces of gold dust, most of which had been sent to the United States Mint at Philadelphia.

As the padres and the rancheros discouraged the quest of gold, this early, small production caused no particular excitement. It was not until James W. Marshall's finding of gold nuggets in the tail-race of Sutter's saw mill on the American River, January 24, 1848, was heralded abroad that the great rush began, and California became a commonwealth of first rank almost over night. There are, however, no authentic data on gold production prior to 1848, other than occasional, scattered references such as above quoted.

The following table was originally compiled by Chas. G. Yale, of the Division of Mineral Resources, U. S. Geological Survey, but for a number of years statistician of the California State Mining Bureau and the U. S. Mint at San Francisco. The authorities chosen for certain periods were: J. D. Whitney, state geologist of California; John Arthur Phillips, author of "Mining and Metallurgy of Gold and Silver" (1867); U. S. Mining Commissioner R. W. Raymond; U. S. Mining Commissioner J. Ross Browne; Wm. P. Blake, Commissioner from California to the Paris Exposition, where he made a report on "Precious Metals" (1867); John J. Valentine, author for many years of the annual report on precious metals published by Wells, Fargo & Com-

[1] Hittell, T. H., History of California, Vol. II, p. 312, 1885.
[2] Bancroft, H. H., History of California, Vol. II, p. 417, 1886.
[3] Mercantile Trust Review of the Pacific, Vol. XIV, No. 2, p. 43, Feb. 15, 1925.

pany's Express; and Louis A. Garnett, in the early days manager of the San Francisco refinery, where records of gold receipts and shipments were kept. Mr. Yale obtained other data from the reports of the director of the U. S. Mint and the director of the U. S. Geological Survey. The authorities referred to who were alive at the time of the original compilation of this table in 1894 were all consulted in person or by letter by Mr. Yale with reference to the correctness of their published data, and the final table quoted was then made up.

The figures for 1903–1923 (inclusive) are those prepared by the U. S. Geological Survey; and since by the U. S. Bureau of Mines:

Total Gold Production of California

Year	Value	Year	Value
1848	$245,301	1893	$12,538,780
1849	10,151,360	1894	13,863,282
1850	41,273,106	1895	15,334,317
1851	75,938,232	1896	17,181,562
1852	81,:94,700	1897	15,871,401
1853	67,613,487	1898	15,906,478
1854	69,433,931	1899	15,336,031
1855	55,485,395	1900	15,863,355
1856	57,509,411	1901	16,989,044
1857	43,628,172	1902	16,910,320
1858	46,591,140	1903	16,300,653
1859	45,846,599	1904	18,633,676
1860	44,095,163	1905	18,898,545
1861	41,884,995	1906	18,732,452
1862	38,854,668	1907	16,727,928
1863	23,501,736	1908	18,761,559
1864	24,071,423	1909	20,237,870
1865	17,930,858	1910	19,715,440
1866	17,123,867	1911	19,738,908
1867	18,265,452	1912	19,71?,478
1868	17,555,867	1913	20,406,958
1869	18,229,044	1914	20,653,496
1870	17,458,133	1915	22,442,296
1871	17,477,885	1916	21,410,741
1872	15,482,194	1917	20,087,504
1873	15,019,210	1918	16,528,953
1874	17,264,836	1919	16,695,955
1875	16,876,009	1920	14,311,043
1876	15,610,723	1921	15,701,822
1877	16,501,268	1922	14,670,346
1878	18,839,141	1923	13,379,013
1879	19,626,654	1924	13,150,175
1880	20,030,761	1925	13,065,330
1881	19,223,155	1926	11,923,481
1882	17,146,416	1927	11,671 018
1883	24,316,873	1928	10,785,315
1884	13,600,000	1929	8,526,703
1885	12,661,044	1930	9,451,162
1886	14,716,506	1931	10,814,162
1887	13,588,614	1932	11,765,726
1888	12,750,000	1933	[a]15,683,075
1889	11,212,913	1934	[b]25,131,284
1890	12,309,793		
1891	12,728,869	Total value	$1,905,050,441
1892	12,571,900		

[a] Value calculated at an average weighted price of $25.56 a fine ounce; previously $20.6718.

[b] Value calculated at an average price of $34.95 a fine ounce.

IRIDIUM (see under Platinum)

IRON ORE

Bibliography: State Mineralogist Reports II, IV, V, X, XII–XV (inc.), XVII, XVIII, XXI–XXVII (inc.), XXX. Bulletins 38, 67, 91. Am. Inst. Min. Eng., Trans. LIII. Min. & Sci. Press, Vol. 115, pp. 112, 117–122; Vol. 123, pp. 94–96, 113–114.

During 1934 there were shipments of iron ore from both San Bernardino and Santa Cruz counties. The material from the first county was hematite and used in the manufacture of high-iron cement, the latter produced a magnetite to be used in a heavy concrete for a counterbalance of a draw-bridge between Oakland and Alameda. The annual details are combined under the 'Unapportioned' item to conceal the output of either operator. There are considerable deposits of iron ore known in California, notably in Shasta, Madera, Placer, Riverside, San Bernardino, and Los Angeles counties, but production has so far been limited for lack of an economic supply of coking coal. Some pig iron has been made, utilizing charcoal for fuel, both in blast furnaces and by electrical reduction; also, ferrochrome, ferromanganese, and ferrosilicon have been made in California.

Iron Ore Production in California, by Years.

Total iron ore production of California, with annual amounts and values, is as follows:

Year	Tons	Value	Year	Tons	Value
1881*	9,273	$79,452	1916	3,000	$6,000
1882	2,073	17,766	1917	2,874	11,496
1883	11,191	106,540	1918	3,108	15,947
1884	4,532	40,983	1919	2,300	13,796
1885	----------	----------	1920	5,975	40,889
1886	3,676	19,250	1921	1,970	12,030
1887	----------	----------	1922	3,588	18,868
1893	250	2,000	1923	3,102	18,665
1894	200	1,500	1924 } [a]	785	4,710
1895	----------	----------	1925 }		
1907	400	400	1926 } [a]	5,272	26,000
1908	----------	----------	1927 }		
1909	108	174	1928	----------	----------
1910	579	900	1930 [a]	100	700
1911	558	558	1931		
1912	2,508	2,508	1932	----------	----------
1913	2,343	4,485	1934	a	a
1914	1,436	5,128			
1915	724	2,584	Totals	71,905	$553,329

* Productions for the years 1881-1886 (inc.) were reported as "tons of pig iron" (U.S.G.S., Min. Res. 1885), and for the table herewith are calculated to "tons of ore" on the basis of 47.6% Fe as shown by an average of analyses of the ores (State Mineralogist Report IV, p. 242). This early production of pig iron was from the blast furnaces then in operation at Hotaling in Placer County. Charcoal was used in lieu of coke. Though producing a superior grade of metal, they were obliged finally to close down, as they could not compete with the cheaper English and eastern United States iron brought in by sea to San Francisco.

[a] Annual details concealed under 'Unapportioned.'

LEAD

Bibliography: State Mineralogist Reports IV, VIII–XV (inc.), XVII–XXVIII (inc.), XXX.

The production of lead in California during 1934 amounted to 804,911 pounds of recoverable metal valued at $29,782, as compared with the 1933 figures of 772,463 pounds worth $28,583. The average value of lead in 1934 was 3.7¢ per pound, compared with 3.7¢ per pound in 1933, 3.0¢ per pound in 1932, 3.7¢ per pound in 1931, and 5.0¢ per pound in 1930.

Distribution of the 1934 output by counties was as follows:

County	*Pounds*	*Value*
Alpine	1,564	$58
Amador	6,012	223
Inyo	530,037	19,611
Kern	11,008	407
Los Angeles	4,008	148
Mono	7,487	277
Nevada	130,301	4,821
Plumas	2,960	110
Riverside	1,207	45
San Bernardino	103,497	3,829
Sierra	2,104	78
Tulare	2,697	100
Butte, Calaveras, El Dorado, Mariposa, Placer, Sacramento, Shasta, Siskiyou [a]	2,029	75
Totals	804,911	$29,782

[a] Combined to conceal the output of individual operators in each.

Lead Production of the United States.

According to preliminary data issued by the U. S. Bureau of Mines[1] during 1934, the production of primary lead in the United States was 299,481 short tons, valued at $22,188,000, being an increase over the national production of 1933 which was 259,616 short tons worth $19,212,000.

Lead Production of California, by Years.

Statistics on lead production in California were first compiled by this Bureau in 1887. Amount and value of the output, annually, with total figures, to date, are given in the following table:

Lead Production in California, by Years

Year	Pounds	Value	Year	Pounds	Value
1877	[a] 7,836,000	$391,800	1907	328,681	$16,690
1878	8,640,000	328,320	1908	1,124,483	46,663
1879	4,502,000	191,335	1909	2,685,477	144,897
1880	4,200,000	215,460	1910	3,016,902	134,082
1881	6,680,000	325,316	1911	1,403,839	63,173
1882	[b] 4,000,000	196,800	1912	1,370,067	61,653
1883	[c] 3,400,000	145,520	1913	3,640,951	160,202
1884	3,200,000	120,512	1914	4,697,400	183,198
1885	2,000,000	80,900	1915	4,796,299	225,426
1886	2,000,000	93,400	1916	12,392,031	855,049
1887	[d] 1,160,000	52,200	1917	21,651,352	1,862,016
1888	900,000	38,250	1918	13,464,869	956,006
1889	940,000	35,720	1919	4,139,562	219,397
1890	800,000	36,000	1920	4,903,738	392,300
1891	1,140,000	49,020	1921	1,149,051	51,707
1892	1,360,000	54,400	1922	6,511,280	358,120
1893	666,000	24,975	1923	9,934,522	695,416
1894	950,000	28,500	1924	4,984,387	398,751
1895	1,592,400	49,364	1925	7,352,422	639,661
1896	1,293,500	38,805	1926	8,067,873	645,429
1897	596,000	20,264	1927	2,748,440	173,151
1898	655,000	23,907	1928	1,882,795	109,102
1899	721,000	30,642	1929	1,428,777	90,014
1900	1,040,000	41,600	1930	3,542,796	176,241
1901	720,500	28,820	1931	3,934,240	145,568
1902	349,440	12,230	1932	2,418,626	72,480
1903	110,000	3,960	1933	772,463	28,583
1904	124,000	5,270	1934	804,911	29,655
1905	533,680	25,083			
1906	338,718	19,307	Totals	197,596,472	$11,642,310

[a] Quantities for 1877–1881 (inc.) from C. E. Siebenthal, Mineral Resources of U. S. 1912, Part I, U. S. Geol. Survey, p. 339; and values for same years from quotations in Eng. & Min. Jour. of New York.

[b] Estimated.

[c] Quantities and values for 1883–1886 (inc.) from Mineral Resources of U. S. Geol. Surv., 1883–1886, respectively.

[d] Data from 1887 to date from reports of California State Mining Bureau.

[1] U. S. Bureau of Mines Mineral Market Report 359, April 16, 1935.

MANGANESE

Bibliography: State Mineralogist Reports XII–XV (inc.), XVIII, XXII–XXVII (inc.), XXIX. Bulletins 38, 67, 76, 91. U. S. G. S. Bull. 427. Eng. & Min. Jour.-Press, Vol. 117, p. 545.

During 1934 there were shipments of manganese ore coming from Lake, Riverside and San Bernardino counties, this material being shipped to the steel mills in the state. The annual details are concealed under the 'Unapportioned' item as one operator made all the shipments.

Imports of foreign manganese ore into the United States[1] during 1934, mainly from Soviet Russia, Gold Coast, Cuba, and Brazil, amounted to 341,339 long tons of ore containing 165,840 long tons of manganese valued at $3,529,182, as compared with 288,187 long tons of ore, containing 141,458 long tons of manganese, worth $3,003,091.

The Tariff Act of 1930 provides for an import duty of 1¢ per pound on the metallic manganese contained, for "manganese ore (including ferruginous manganese ore) or concentrates containing in excess of 10 per centum of metallic manganese."

Manganese Ore Production in California, by Years.

Production of manganese ore in California began at the Ladd Mine, San Joaquin County, in the Tesla District in 1867. When shipments of this ore to England ceased late in 1874, upwards of 5000 tons had been produced by that property. For some years following that, the output was small. The tabulation herewith shows California's ouput of manganese ore, annually, since 1887, when the compilation of such figures was begun by the State Mining Bureau:

Year	Tons	Value	Year	Tons	Value
1887	1,000	$9,000	1912	22	$400
1888	1,500	13,500	1913	----------	----------
1889	53	901	1914	150	1,500
1890	386	3,176	1915	4,013	49,098
1891	705	3,830	1916	13,404	274,601
1892	300	3,000	1917	15,515	396,659
1893	270	4,050	1918	26,075	979,235
1894	523	5,512	1919	11,569	451,422
1895	880	8,200	1920	2,892	62,323
1896	518	3,415	1921	1,005	12,210
1897	504	4,080	1922	540	7,650
1898	440	2,102	1923	690	10,620
1899	295	3,165	1924	1,115	25,785
1900	131	1,310	1925	832	19,450
1901	425	4,405	1926	235	4,700
1902	870	7,140	1927	----------	----------
1903	1	25	1928	*	
1904	60	900	1929	733	8,216
1905	----------	----------	1930	*	
1906	1	30	1931	207	2,576
1907	1	25	1932	----------	----------
1908	321	5,785	1934	*	*
1909	3	75			
1910	265	4,235	Totals	88,451	$2,394 346
1911	2	40			

* Annual details concealed under 'Unapportioned.'

[1] U. S. Bureau of Foreign and Domestic Commerce, Monthly Summary, Dec., 1934.

MOLYBDENUM

Bibliography: State Mineralogist Reports XIV, XVII–XXIV (inc.), XXVI–XXVIII (inc.), XXX. Bulletins 67, 91. U. S. Bur. of Min., Bulletin 111. Proc. Colo Sci. Soc., Vol. XI.

Molybdenum is used as an alloy constituent in the steel industry, and in certain forms of electrical apparatus. Included in the latter is its successful substitution for platinum and platinum-iridium in electric contact-making and -breaking devices. In alloys it is used similarly to and in conjunction with chromium, cobalt, iron, manganese, nickel, tungsten, and vanadium. The oxides and the ammonium salt have important chemical uses.

The two principal molybdenum minerals are: the sulphide, molybdenite, and wolfenite, lead molybdate; the former furnishing practically the entire commercial output. Molybdenite is found in or associated with acidic igneous rocks, such as granite and pegmatite.

Deposits of disseminated molybdenite are known in several localities in California, and in at least two places it occurs in small masses associated with copper sulphides. The first recorded commercial shipments of molybdenum ore in California were during the war 1916–1918. Some development work has been recently done on a high-grade deposit at the head of the Kaweah River, Tulare County.

The Tariff Act of 1930 provides for an import duty of 35 cents a pound for the metallic molybdenum content of molybdenum ores or concentrates.

The present (Aug. 1, 1935) quotations on molybdenum ores are 42¢ per pound of MoS_2 contained, delivered at Pittsburgh, Pa., and on ferromolybdenum are 95¢ per pound Mo, 50%-60% Mo f.o.b. shipping point.

During 1933 and 1934 there were shipments of molybdenum concentrates in California amounting to 1432 pounds 91.23% MoS_2 valued at $306. The annual details are combined under the 'Unapportioned' item to conceal the output of either operator. The material shipped in 1933 came from Inyo County and had been mined for several years, and that shipped in 1934 came from Mono County and was mined in 1933.

Molybdenum Production of California, by Years.

California's production of molybdenum ore by years is summarized in the following tabulation:

Year	*Tons*	*Value*
1916	8	$9,945
1917	243	9,014
1918	*	300
1919	---	------
1933 } [a]	[b]	306
1934 }		
Totals	252	$19,565

* 300 pounds of 90% MoS_2 concentrate.
[a] Annual details concealed under 'Unapportioned.'
[b] 1432 pounds of 91.23% MoS_2 concentrates.

NICKEL

Bibliography: State Mineralogist Reports XIV, XVII, XXIV, XXV, XXVIII, XXX. U. S. G. S., Bulletin 640-D. U. S. Bureau of Standards, Circular 100.

Nickel occurs in the Friday Copper Mine in the Julian District, San Diego County. The ore is a nickel-bearing pyrrhotite, with some associated chalcopyrite. Some ore has been mined in the course of development work but not treated nor disposed of, as they were unable to get any smelter to handle it for them. Nickel ore has also been reported from other localities in California, but not yet confirmed.

Present (Aug. 1, 1935) quotations for nickel are around 35¢-36¢ per pound for the refined metal.

OSMIUM (see under Platinum)

PALLADIUM (see under Platinum)

PLATINUM

Bibliography: State Mineralogist Reports IV, VIII, IX, XII–XXVI (inc.), XXVIII, XXX. Bulletins 38, 45, 67, 85, 91, 92. U. S. Geol. Surv., Bulletins 193, 285. Trans. Am. Inst. Min. Eng., Vol. 47, pp. 217–218.

In California the platinum group metals are obtained as a by-product from placer operations for gold. The major portion of it comes from the dredges working in Amador, Butte, Sacramento, Stanislaus, Shasta and Yuba counties, with a small amount coming from the hydraulic and surface-sluicing mines of Del Norte, Humboldt, Siskiyou and Trinity counties.

The production of platinum-group metals in California during 1934, amounted to 520 ounces crude containing 424 fine ounces worth $14,884 (some of the above material was mined before 1934 but not sold until then). Compared with 236 fine ounces valued at $7,255 in 1933. This metal came from properties in Del Norte, Merced, Sacramento, Shasta, Stanislaus, Trinity, and Yuba counties. Of the 424 fine ounces, 302 fine ounces were platinum, 45 fine ounces were iridium, 50 fine ounces were osmium, 25 fine ounces were ruthenium, and 2 fine ounces were palladium.

Prices.

The average prices during 1934 for the various platinum group metals per fine ounce, according to refiners' reports, as given by the U. S. Bureau of Mines[1] were: platinum, $34.50; palladium, $22.54; iridium, $54.74; osmium, $63; rhodium, $41.10; and ruthenium, $37.40, compared with the 1933 prices, which were: platinum $30.75; palladium, $18.30; iridium, $54.30; osmium, $56; rhodium, $43.50 and ruthenium, $41.75.

[1] U. S. Bureau of Mines, Mineral Market Report 379, August 14, 1935.

Platinum Production of California, by Years.

The annual production and values since 1887 have been as follows:

Year	Ounces	Value	Year	Ounces	Value
1887	416	$10,400	1912	603	$19,731
1888	100	400	1913	368	17,738
1889	500	2,000	1914	463	14,816
1890	500	2,000	1915	667	21,149
1891	600	2,500	1916	886	42,642
1892	100	500	1917	610	43,719
1893	80	440	1918	571	42,788
1894	75	517	1919	*418	60 611
1895	100	600	1920	477	68,977
1896	150	900	1921	613	58,754
1897	162	944	1922	795	90,288
1898	150	900	1923	602	78,546
1899	300	1,800	1924	273	36,452
1900	300	1,800	1925	292	39,937
1901	400	2,500	1926	322	32,005
1902	250	3,200	1927	139	10,749
1903	39	468	1928	312	27,902
1904	70	1,052	1929	212	14,416
1905	123	1,849	1930	217	11,700
1906	200	3,320	1931	305	11,979
1907	91	1,647	1932	278	8,142
1908	300	6,255	1933	236	7,255
1909	706	13,414	1934	424	14,884
1910	337	8,386			
1911	511	14,873	Totals	16,637	$857,845

* Fine ounces, beginning with 1919.

QUICKSILVER

Bibliography: State Mineralogist Reports IV, V, XII–XV, XVII–XXIX (inc.), XXXI. Bulletins 27, 78, 91. U. S. Geol. Surv., Monograph XIII. U. S. Bur. of Mines, Tech. Papers 96, 227; Bulletin 222, 335.

The production of quicksilver in California during 1934 was 7946 flasks valued at $534,135. This was an increase in both quantity and value over the 1933 figures which were 4102 flasks worth $229,472. The distribution of the 1934 output by counties was as follows:

County	*Flasks*	*Value*
Fresno	17	$1,208
Lake	3,497	221,837
Napa	1,706	120,372
San Benito	746	52,699
San Luis Obispo	1,302	91,677
Santa Clara	39	2,813
Sonoma	393	27,228
Colusa, Kern, Kings, Monterey, Trinity [a]	246	16,301
Totals	7,946	$534,135

[a] Combined to conceal the output of individual operators in each.

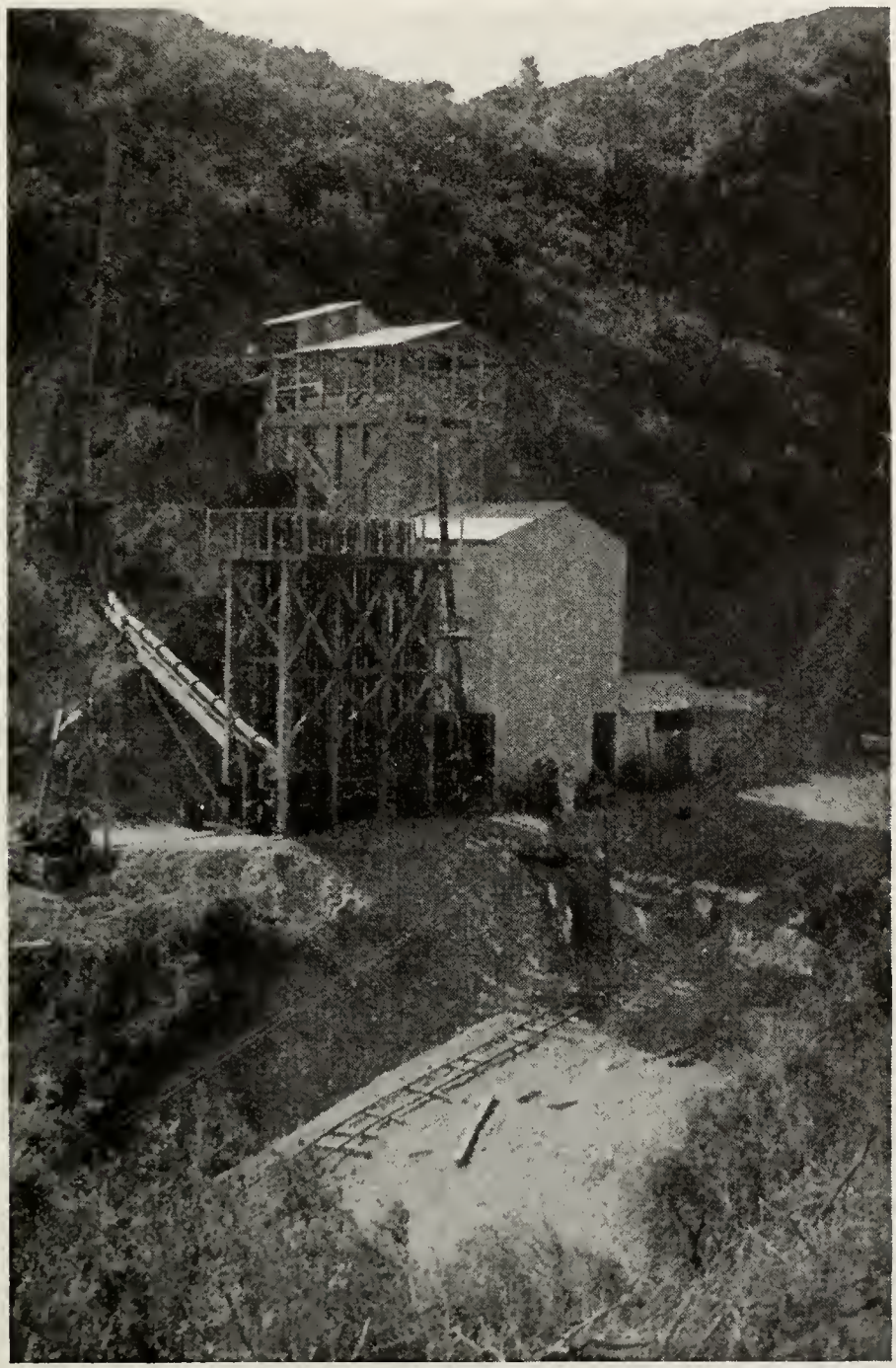
Prices.

During 1934 the average for New York monthly quotations[1] was $73.865 per 76 pound flasks. The average price for January was $67.54 raising to $75.93 for April and ending the year at $73.00. The average amount received by producers in California during 1934 was $67.22 per 76 pound flasks, compared with $55.94 per flask in 1933.

The U. S. Bureau of Mines[2] reported the total production of the United States for 1934 at 15,445 flasks valued at $1,140,845. California was by a considerable margin the largest producing state with

[1] Engineering & Mining Journal Vol. 134, 1934.
[2] U. S. Bureau of Mines Mineral Market Rept. 372, May 17, 1935.

approximately 51 per cent of the total, other producing states being Oregon, Texas, Arkansas, Washington, Nevada, and Utah. The national production for 1933 was 9669 flasks worth $572,666. During 1934 imports of quicksilver amounted to 10,192 flasks worth $752,832, of which 69 per cent came from Spain, 24 per cent from Mexico, and the remainder from Italy and Sweden. The 1934 imports showed a decrease from those of 1933, which were 22,555 flasks worth $778,007.



Furnace and condenser plant of Santa Ynez Mercury Company, near Santa Ynez, Santa Barbara County.

Photo by Walter W. Bradley.

Total Quicksilver Production of California.

Total amount and value of the quicksliver production of California, as given in available records, are shown in the following tabulation.

Though the New Almaden Mine in Santa Clara County was first worked in 1824, and has been in practically continuous operation since 1846 (the yield being small the first two years), there are no available data on the output earlier than 1850. Previous to June, 1904, a 'flask' of quicksilver contained 76½ pounds; then 75 pounds upto and including 1927; beginning with 1928, 76 pounds. In compiling this table the following sources of information were used: for 1850–1883, table by J. B. Randol, in Report of State Mineralogist IV, p. 336; 1883–1893, U. S. Geological Survey reports; 1894 to date, statistical bulletins of the State Mining Bureau; also State Mining Bureau, Bulletin 27, "Quicksilver Resources of California," 1908, p. 10.

Year	Flasks	Value	Average price per flask	Year	Flasks	Value	Average price per flask
1850	7,723	$768,052	$99 45	1894	30,416	$934,000	$30 70
1851	27,779	1,859,248	66 93	1895	36,104	1,337,131	37 04
1852	20,000	1,166,600	58 33	1896	30,765	1,075,449	34 96
1853	22,284	1,235,648	55 45	1897	26 691	993,445	37 28
1854	30,004	1,663,722	55 45	1898	31,092	1,188,626	38 23
1855	33,000	1,767,150	53 55	1899	29,454	1,405,045	47 70
1856	30,000	1,549,500	51 65	1900	26,317	1,182,786	44 94
1857	28,204	1,374,381	48 73	1901	26,720	1,285,014	48 46
1858	31,000	1,482,730	47 83	1902	29,552	1,276,524	43 20
1859	13,000	820,690	63 13	1903	32,094	1 335,954	42 25
1860	10,000	535,500	53 55	1904	[a] 28,876	1 086,323	37 62
1861	35,000	1,471,750	42 05	1905	24,655	886,081	35 94
1862	42,000	1,526,700	36 35	1906	19,516	712,334	36 50
1863	40,531	1,705,544	42 08	1907	17,379	663,178	38 16
1864	47,489	2,179,745	45 90	1908	19,039	763,520	42 33
1865	53,000	2,432,700	45 90	1909	16,217	773,788	47 71
1866	46,550	2,473,202	53 13	1910	17,665	799,002	45 23
1867	47,000	2,157,300	45 90	1911	19,109	879,205	46 01
1868	47,728	2,190,715	45 90	1912	20,600	866,024	42 04
1869	33,811	1,551,925	45 90	1913	15,661	630,042	40 23
1870	30,077	1,725,818	57 38	1914	11,373	557,846	49 05
1871	31,686	1,999,387	63 10	1915	14,199	1,157,449	81 52
1872	31,621	2,084,773	65 93	1916	21,427	2,003,425	93 50
1873	27,642	2,220,482	80 33	1917	24,382	2,396,466	98 29
1874	27,756	2,919,376	105 18	1918	22,621	2,579,472	114 03
1875	50,250	4,228,538	84 15	1919	15,200	1,353,381	89 04
1876	75,074	3,303,256	44 00	1920	10,278	775,527	75 45
1877	79,396	2,961,471	37 30	1921	3,157	140,666	44 56
1878	63,880	2,101,652	32 90	1922	3,466	191,851	55 35
1879	73,684	2,194,674	29 85	1923	5,458	332,851	60 98
1880	59,926	1,857,706	31 00	1924	7,948	543,080	68 33
1881	60,851	1,815,185	29 83	1925	7,683	621,831	80 81
1882	52,732	1,488,624	28 23	1926	5,892	516,382	87 64
1883	46,725	1,343,344	28 75	1927	6,488	714,118	111 67
1884	31,913	973,347	30 50	1928	[b] 7,107	844,649	118 84
1885	32,073	986,245	30 75	1929	10,152	1,195,705	117 78
1886	29,981	1,064,326	35 50	1930	11,374	1,255,257	110 36
1887	33,760	1,430,749	42 38	1931	13,478	1,121,624	83 22
1888	33,250	1,413,125	42 50	1932	5,349	279,780	52 30
1889	26,464	1,190,880	45 00	1933	4,102	229,472	55 94
1890	22,926	1 203,615	52 50	1934	7,946	534,135	67 22
1891	22,904	1,036,406	45 25				
1892	27,993	1,139,595	40 71	Totals	2,785,427	$115,222,544	
1893	30,164	1,108,527	36 75				

[a] Flasks of 75 lbs. since June, 1904; of 76½ lbs. previously.
[b] Flasks of 76 pounds, from January, 1928.

SILVER

Bibliography: State Mineralogist Reports IV, VIII, XII–XXXI (inc.). Bulletins 67, 91, 108. Min. & Sci. Press, March 1, 1919.

The 1934 silver output in California totaled 844,413 fine ounces valued at $545,883, being an increase in both amount and value over the figures of the previous year which were 402, 591 fine ounces worth

$140,907. Of the 1934 yield there were 23,248 fine ounces worth $15,029 from placers. The average price of domestic silver was 64.6¢ per fine ounce in 1934, compared with 35.0¢ per ounce in 1933, 28.2¢ per ounce in 1932 and 29.0¢ per ounce in 1931.

Distribution of the 1934 silver production by counties was as follows:

County	*Fine ounces*	*Value*
Alpine	3,668	$2,371
Amador	16,311	10,544
Butte	4,907	3,172
Calaveras	10,661	7,021
Colusa	5	3
Del Norte	20	13
El Dorado	9,335	6,035
Fresno	135	87
Humboldt	124	80
Imperial	110	71
Inyo	40,130	25,943
Kern	113,646	73,468
Kings	4	3
Lassen	430	278
Los Angeles	827	535
Madera	107	69
Mariposa	4,971	3,214
Merced	1,625	1,051
Modoc	103	67
Mono	31,255	20,205
Monterey	1	1
Nevada	314,509	203,196
Orange	2	1
Placer	10,808	6,987
Plumas	1,111	718
Riverside	664	429
Sacramento	4,548	2,940
San Bernardino	228,314	147,597
San Diego	289	187
San Joaquin	3	2
San Luis Obispo	8	5
Santa Cruz	2	1
Shasta	26,012	16,816
Sierra	7,032	4,546
Siskiyou	2,879	1,861
Stanislaus	841	544
Tehama	3	2
Trinity	2,537	1,640
Tulare	145	94
Tuolumne	1,775	1,147
Ventura	10	6
Yolo	1	1
Yuba	4,545	2,938
Totals	844,413	$545,883

The following paragraph is quoted from the U. S. Bureau of Mines, chapter on Gold and Silver from Mineral Year Book 1934–1935 by courtesy of F. W. Horton and H. M. Gaylord:

"*Silver.*—The output of silver from California mines was 844,413 fine ounces valued at $545,883 in 1934 compared with 402,591 ounces valued at $140,907 in 1933, an increase of 110 per cent in quantity and 287 per cent in value; the average price was 64.61 cents per ounce in 1934 compared with 35 cents in 1933. Lode mines yielded 821,165 ounces (97 per cent) of the total silver in 1934; placers yielded 23,248 ounces, of which dredges recovered 12,386 ounces.

"Nevada County with a production of 314,309 ounces, largely from gold ore mined in the Grass Valley-Nevada City district, ranked first in output. San Bernardino County with 228,314 ounces, mostly from gold-silver ore from the Kelly mine in the Randsburg district, ranked second; Kern County with 113,646 ounces, more than half of which came from gold ore from the recently discovered Silver Queen mine at Mojave, ranked third; Inyo and Mono Counties with 40,130 and 31,255 ounces, respectively, ranked fourth and fifth; lead ore from the Estelle and the Santa Rosa mines in the Cerro Gordo district was the principal source of silver in Inyo County, and silver ore from the Silverado mine yielded almost all the silver produced in Mono County. These five counties produced 727,654 ounces (86 per cent) of the state total. Of the state total lode silver, 542,071 ounces (66 per cent) came from gold ore, etc., 180,287 ounces (22 per cent) from gold-silver ore, 47,276 ounces (5.8 per cent) from silver ore, 49,729 ounces (6 per cent) from lead ore, and 1,802 ounces (0.2 per cent) from copper and copper-lead ores."

Silver Production of California, by Years.

The amount and value of the silver production of California, and the average price, annually, since 1880 are given in the table following. In the table shown in the statistical bulletins previous to Bulletin 97 (for 1925), the values shown for 1880–1904 (inc.) were taken from the reports of the Director of the Mint, of which the figures for 1880–1896 (inc.) were based on 'coinage value' ($1.2929 per fine ounce). We have recalculated these to commercial value, using the price table of the U. S. Geological Survey (McCaskey, H. D.), Gold and Silver, 1913: Mineral Resources of the U. S., Part I, p. 847). From 1905 to date, the figures are those of the U. S. Geological Survey and its successors, the U. S. Bureau of Mines. Figures for the years prior to 1880 are not available, as there were no reliable records compiled.

Silver Production of California, by Years, Since 1880

Year	Fine oz.	Value	Average price per oz.	Year	Fine oz.	Value	Average price per oz.
1880	882,169	$1,014,494	$1 15	1909	2,098,253	$1,091,092	$0 52
1881	580,091	655,503	1 13	1910	1,840,085	993,646	54
1882	653,569	745,069	1 14	1911	1,270,445	673,336	53
1883	1,129,244	1,253,461	1 11	1912	1,300,136	799,584	615
1884	3,236,987	3,593,056	1 11	1913	1,378,399	832,553	604
1885	1,986,260	2,125,298	1 07	1914	1,471,859	813,938	553
1886	1,245,747	1,233,290	0 99	1915	1,678,756	851,129	507
1887	1 262,282	1,237,036	0 98	1916	2,564,354	1,687,345	658
1888	1,314,874	1,235,982	0 94	1917	1,775,431	1,462,955	824
1889	823,947	774,510	0 94	1918	1,427,711	1,427,711	1 00
1890	820,336	861,353	1 05	1919	1,107,189	1,240,051	1 12
1891	737,224	729,852	0 99	1920	1,706,327	1,859,896	1 09
1892	358,575	311,960	87	1921	3,629,223	3,629,223	1 00
1893	415,468	324,065	78	1922	3,100,065	3,100,065	1 00
1894	229,896	144,834	63	1923	3,559,443	2,918,743	82
1895	463 911	301,542	65	1924	3,555,133	2,381,952	67
1896	326,757	222,195	68	1925	3,054,416	2,119,765	694
1897	754,648	452,789	60	1926	2,022,460	1,262,015	624
1898	701,788	414,055	59	1927	1,620,242	918,677	567
1899	855,869	513,521	60	1928	1,478,771	865,081	585
1900	1,168,157	724,257	62	1929	1,176,895	627,285	533
1901	950,831	570,499	60	1930	1,622,803	624,779	385
1902	1,163,041	616,412	53	1931	867,818	251,667	290
1903	958,230	517,444	54	1932	493,533	139,176	282
1904	1,441,259	835,929	58	1933	402,591	140,907	350
1905	1,076,174	650,009	61	1934	844,413	545,883	644
1906	1,220,641	817,830	68				
1907	1,138,856	751,646	66	Totals	76,590,860	$57,759,402	
1908	1,647,278	873,057	53				

TIN

Bibliography: Reports XV, XVII, XVIII, XXV. Bulletins 67, 91.

In 1928 and 1929 there was a small amount of tin produced from Californian ore as well as considerable development work which was done at the Temescal mine in Riverside County near Corona. There was an output from the district during 1891–1892 as tabulated below. Small quantities of stream tin have been found in some of the placer workings in northern California, but never in paying amounts.

Two occurrences have also been noted, in northern San Diego County. Crystals of cassiterite were found there, associated with blue tourmaline crystals, amblygonite and beryl. No commercial quantity has been developed, only small pockets have been taken out.

Total Output of Tin in California

Year	Pounds	Value
1891	125,289	$27,564
1892	126,000	32,400
1928} 1929}	*	*
Totals	251,289	$59,964

* Annual details concealed under 'Unapportioned.'

TITANIUM

Bibliography: State Mineralogist's Report XXIII.

During 1934 there was no production of titanium ores reported in California. In 1927 the first recorded shipments of titanium minerals were made in California. The total of the 1927 and 1928 production was 10,013 tons valued at $150,195. All of this came from Los Angeles County and was produced from either the beach black sands which contained approximately 20% titaniferous iron and magnetite, the gangue being silica and several silicates, or from a lode deposit in the San Gabriel Mountains.

The market price of titanium minerals varies as to the titanium oxide it contains. Present (Aug. 8, 1935) quotations are: Rutile 94% TiO at 10¢ a pound, ilmenite 45 to 52% TiO at $10 to $12 a ton, all prices Atlantic seaboard.

TUNGSTEN

Bibliography: Reports XV, XVII, XVIII, XXII, XXIV, XXVII (inc.) XXX. Bulletins 38, 67, 91, 95, U. S. G. S., Bull. 652. Proc. Colo. Sci. Soc., Vol. XI. South Dakota School of Mines, Bulletin No. 12. Eng. and Min. Jour.-Press, Vol. 113, pp. 666–669, Apr. 22, 1922.

The commercial production of tungsten ores and concentrates in California began in 1905; and has been continuous since, with the exception of 1920–1922 (inclusive). The material shipped in 1934 was high-grade sorted ore and concentrates, coming from a single property each in Kern, San Bernardino and Tulare counties. A total of 247 short tons were reported shipped, yielding 261 tons recalculated to 60% WO_3, valued at $224,417. The 1934 output showed an increase in both quantity and value as compared with that of 1933, which was 148 tons worth $76,605.

Quotations in "Metal and Minerals Markets" during 1934 ranged from $15 to $19.25 per unit WO_3 for Chinese wolframite, duty paid; $14 to $19 per unit WO_3 for Bolivian scheelite, duty paid; from $14 to $19 for domestic scheelite. The highest prices were received at the end of the year. Present (Aug. 8, 1935) prices per unit WO_3 at New York are: Chinese wolframite, duty paid, $15 to $15.50; Bolivian scheelite, $15; domestic scheelite, $15.

Imports of foreign tungsten ores and alloys into the United States during 1934, according to the U. S. Bureau of foreign and Domestic Commerce was 1,570,211 pounds valued at $339,634, compared with 1,230,608 pounds worth $162,060 in 1933. The Tariff Act of 1930 raised the duty on tungsten ore or concentrates to 50 cents per pound

on the metallic tungsten contained therein. Duties are also provided for imported tungsten-bearing alloys.

Tungsten ore has been produced in California principally in the Atolia-Randsburg district in San Bernardino and Kern counties, followed by the Bishop district in Inyo County, with small amounts coming from Nevada County and from the district near Goffs, in eastern San Bernardino. Most of California's tungsten ore is scheelite (calcium tungstate), though wolframite (iron-manganese tungstate) and hübernite (manganese tungstate) also occur. The deposits at Atolia are the largest and most productive scheelite deposits known.

Total Tungsten Ore Production of California.

The annual amount and value of tungsten ores and concentrates produced in California since the inception of the industry is given herewith, with tonnages recalculated to 60% WO_3:

Year	Tons at 60% WO_3	Value	Year	Tons at 60% WO_3	Value
1905	57	$18,800	1920		
1906	485	189,100	1923	34	$19,126
1907	287	120,587	1924	781	446,009
1908	105	37,750	1925	573	348,475
1909	577	190,500	1926	441	316,560
1910	457	208,245	1927	398	429,237
1911	387	127,706	1928		
1912	572	206,000	1929	150	106,280
1913	559	234,673	1930	120	82,582
1914	420	180,575	1931		
1915	962	1,005,467	1932	26	9,509
1916	2,270	4,571,521	1933	148	76,605
1917	2,466	3,079,013	1934	261	224,417
1918	1,982	2,832,222			
1919	214	219,316	Totals	14,732	$15,280,171

* Annual details concealed under 'Unapportioned.'

VANADIUM

Bibliography: Reports XV, XXVI. Bulletins 67, 91. Proc. Colo. Sci. Soc., Vol. XI. U. S. Bur. of Mines, Bulletin 104.

No commercial production of vanadium has yet been made in California. Occurrences of this metal have been found at Camp Signal, near Goffs, in San Bernardino County, and two companies at one time did considerable development work in the endeavor to open up paying quantities. Some ore carrying lead vanadate has been developed in the 29 Palms, or Washington district, on the line between Riverside and San Bernardino counties, but no shipments reported.

Present New York quotations for ferrovanadium are $2.70–$2.90 per pound of vanadium f.o.b. works, and vanadium ore 26¢ per pound V_2O_5 contained.

ZINC

Bibliography: State Mineralogist Reports XIV, XV, XVII, XVIII, XX–XXIV, XXVI, XXVII, XXX. Bulletins 38, 67, 91.

The recoverable zinc mined in California during 1934 amounted to 721,719 pounds of metal valued at $31,034, compared with the 1933 output of 290,222 pounds worth $12,189. The 1934 production was a carbonate ore coming from Inyo County.

The zinc ores of Shasta and Calaveras counties are associated with copper, while those of Inyo, Los Angeles and San Bernardino are associated principally with lead-silver and zinc-silver ores.

The production of metallic zinc[1] at reduction plants in the United States during 1934 amounted to 383,281 short tons valued at $32,962,000 of which 8224 tons were reduced from foreign ores and 19,691 tons from secondary metal. The 1934 output was an increase over that of 1932, which was 337,269 short tons worth $28,331,000.

The average price per pound for zinc in 1934 was 4.3¢, compared with 4.2¢ in 1933, 3.0¢ in 1932, 3.8¢ in 1931, and 4.8¢ in 1930.

Total Zinc Production of California.

Total figures for zinc output of the state are as follows, commercial production dating back only to 1906:

Year	Pounds	Value	Year	Pounds	Value
1906	206,000	$12,566	1921	846,184	$42,309
1907	177,759	10,598	1922	3,034,430	172,963
1908	54,000	3,544	1923		
1909			1924	3,060,000	198,900
1910			1925	11,546,602	877,542
1911	2,679,842	152,751	1926	20,447,559	1,533,568
1912	4,331,391	298,866	1927	8,625,004	552,000
1913	1,157,947	64,845	1928		
1914	399,641	20,381	1929		
1915	13,043,411	1,617,383	1931	149,865	5,314
1916	15,950,565	2,137,375	1932		
1917	11,854,804	1,209,190	1933	290,222	12,189
1918	5,565,516	506,466	1934	721,719	31,034
1919	1,384,192	101,046			
1920	1,188,009	96,229	Totals	106,714,710	$9,657,059

[1] U. S. Bureau of Mines, Mineral Market Report 352, March 8, 1935.

CHAPTER FOUR

STRUCTURAL MATERIALS

Bibliography: State Mineralogist Reports XII–XXXI (Inc.). Bulletin 38. Spurr and Wormser, "Marketing of Metals and Minerals." "Non-Metallic Minerals," by R. B. Ladoo. See also under each substance.

As indicated by this subdivision heading, the mineral substances herein considered are those more or less directly used in building and structural work. California is independent, so far as these are concerned, and almost any reasonable construction can be made with materials produced in the State. Chromite, which was previously listed under structural material in the statistical reports of the State Division of Mines, is now transferred to the metals group, thus coinciding with the practice of the United States Bureau of Mines.

This branch of the mineral industry for 1934 was valued at $22,078,829, as compared with a total value of $19,444,544 for the year 1933. All materials grouped under this classification showed an increased value in 1934 over the previous year with the exception of marble and slate, both of which showed decreased values.

In 1934 all counties, with the exception of Sutter, contributed to this structural total. There is not a county in the fifty-eight counties of the State which is not capable of producing at least one of the materials under the classification and in 1926 every county contributed one or more substances to the group.

The following summary shows the value of the structural materials produced in California during the years 1933–1934, with increases or decreases in each instance:

Substance	1933		1934		Increase+ Decrease— Value
	Amount	Value	Amount	Value	
Brick and hollow building tile		$1,520,481		$1,644,661	$124,180+
Cement	7,284,031 bbls.	10,331,395	8,936,085 bbls.	12,445,616	2,114,221+
Granite		183,706		249,083	65,377+
Lime	33,425 tons	271,619	32,500 tons	309,765	38,146+
Marble[a]		23,178		10,759	12,419—
Sandstone		10,888		14,245	3,357+
Slate	5,343 tons	31,958	5,065	24,245	7,713—
Stone, miscellaneous		6,871,581		7,131,330	259,749 +
Unapportioned		[b]199,738		[c]249,125	49,387+
Total value		$19,444,544		$22,078,829	
Net increase					$2,634,285+

[a] Includes onyx and travertine.
[b] Includes bituminous rock, magnesite, tube-mill pebbles.
[c] Includes bituminous rock, magnesite, paving blocks, tube-mill pebbles.

ASPHALT

Bibliography: State Mineralogist Reports VII, X, XII–XV (inc.), XVII, XVIII. Bulletins 16, 32, 63, 67, 69, 91.

Asphalt was for a number of years accounted for in the statistical reports by the State Mining Bureau, because in the early days of the

oil industry, considerable asphalt was produced from outcroppings of oil sand, and was a separate industry from the production of oil itself. However, at the present time most of the asphalt comes from the oil refineries, which produce a better and more uniform grade; hence, its value is not now included in the mineral total, as to do so would be in part a duplication of the crude petroleum figures. Such natural asphalt as is at present mined is in the form of bituminous sandstones, and is recorded under that designation.

BITUMINOUS ROCK

Bibliography: State Mineralogist Reports XII, XIII, XV, XVII, XVIII, XXI, XXII, XXV, XXVI.

This material is essentially an uncemented sandstone which is saturated with and held together by a natural asphaltic constituent, probably the residue from the evaporation of a crude petroleum deposit. Bituminous rock is still used to a limited extent for road dressing in those districts adjacent to available deposits, though the manufacture of asphalt at the oil refineries has almost entirely superseded the direct use of the native material. Some of the Santa Cruz County production is put on the market as a material which can be laid cold. This material is especially applicable and valuable for patch jobs.

During 1933 shipments of bituminous rock were made from Santa Barbara and Santa Cruz counties with a single producer in each. The annual details are concealed under the 'Unapportioned' item so as not to reveal the output of either operator. The total of the 1933 and 1934 yields was 36,793 short tons valued at $130,301. The 1934 output showed an increase in both amount and value over that of 1933.

Bituminous Rock Production of California, by Years.

The following tabulation shows the total amount and value of bituminous rock quarried and sold in California, from the records compiled by the State Mining Bureau, annually since 1887:

Year	Tons	Value	Year	Tons	Value
1887	36,000	$160,000	1912	44,073	$87,467
1888	50,000	257,000	1913	37,541	78,479
1889	40,000	170,000	1914	66,119	166,618
1890	40,000	170,000	1915	17,789	61,468
1891	39,962	154,164	1916	19,449	66,561
1892	24,000	72,000	1917	5,590	18,580
1893	32,000	192,036	1918	2,561	9,067
1894	31,214	115,193	1919	4,614	18,537
1895	38,921	121,586	1920	5,450	27,825
1896	49,456	122,500	1921	8,298	43,192
1897	45,470	128,173	1922	4,624	13,570
1898	46,836	137,575	1923	2,945	11,780
1899	40,321	116,097	1924	6,040	14,922
1900	25,306	71,495	1925	2,681	10,724
1901	24,052	66,354	1926	3,863	21,577
1902	33,490	43,411	1927	3,515	17,704
1903	21,944	53,106	1928	4,966	33,832
1904	45,280	175,680	1929	3,320	14,360
1905	24,753	60,436	1930	8,525	36,075
1906	16,077	45,204	1931*		
1907	24,122	72,835	1932	23,653	109,140
1908	30,718	109,818	1933*		
1909	34,123	116,436	1934	36,793	130,301
1910	87,547	165,711			
1911	75,125	117,279	Totals	1,269,126	$4,005,868

* Annual details concealed under 'Unapportioned.'

BRICK AND HOLLOW TILE

Bibliography: State Mineralogist Reports VIII, X, XII–XV (inc.), XVII–XXVIII (inc.). Bulletins 38, 99. Preliminary Report No. 7. Cal. Jour. of Development, June, 1925, pp. 5–6.

Bricks of many varieties and in important quantities are annually produced in California, as might be expected in a state with such diversified and widespread mineral resources. The varieties include common, fire, pressed, glazed, enamel, fancy, vitrified, sand-lime, and others. Not only do the plants here supply practically all of our own requirements in these products, but considerable quantities are shipped to contiguous territory and certain products are shipped over a much wider radius.

We also include under this heading the various forms of hollow building 'tile' or blocks. The application of this title to residence construction as well as to other structures has grown, although their total output for 1934 showed a decrease in value and tonnage as compared with the 1933 production.

During 1934 the output of all kinds of brick showed an increased value of 12 per cent and a decrease in amount of 14 per cent as compared with that of 1933; this is accounted for by the fact that there was less common brick made and more fire, glazed, pressed, fancy, and vitrified paving-brick manufactured during the year. The 1934 production consisted of 46,795 M of common brick valued at $515,407; 15,967 M of fire brick valued at $843,775; 3976 M of glazed, pressed, fancy, and vitrified paving-brick valued at $113,474; and 17,534 tons of hollow building tile valued at $172,005, which gave a total value for the year for brick and hollow building-tile of $1,644,661. The 1933 output had a total value of $1,520,481.

Los Angeles County had the largest output of brick and building-tile, with eighteen companies producing 23,456 M of common brick worth $271,236; 6649 M of fire brick worth $390,621; 634 M of fancy, pressed, and glazed brick worth $23,754; and 3478 tons of hollow building-tile worth $24,960. Alameda County had five plants operated by four companies with an output having a total value of $192,527; Contra Costa County with three operating plants had a production having a total value of $368,572; Sacramento County with three plants had an output worth $40,572; Santa Clara County with three plants had an output worth $54,154. There were two operating plants in each, Riverside, San Diego, and San Joaquin counties and one each in Amador, Butte, Fresno, Humboldt, Kern, Marin, Orange, Placer, San Bernardino, San Luis Obispo, Santa Barbara, Tulare, and Ventura counties.

Brick and Hollow Tile Production of California, by Years.

Record of brick production in the State has been kept since 1893 by this Bureau, the figures for hollow building 'tile' or blocks being also included since 1914. The annual and total figures, for amount and value, are given in the following table:

Year	Brick, M	Hollow building blocks, tons	Value
1893	103,900	------	$801,750
1894	81,675	------	457,125
1895	131,772	------	672,360
1896	24,000	------	524,740
1897	97,468	------	563,240
1898	100,102	------	571,362
1899	125,950	------	754,730
1900	137,191	------	905,210
1901	130,766	------	860,488
1902	169,851	------	1,306,215
1903	214,403	------	1,999,546
1904	281,750	------	1,994,740
1905	286,618	------	2,273,786
1906	277,762	------	2,538,848
1907	362,167	------	3,438,951
1908	332,872	------	2,506,495
1909	333,846	------	3,059,929
1910	340,883	------	2,934,731
1911	327,474	------	2,638,121
1912	337,233	------	2,940,290
1913	358,754	------	2,915,350
1914	270,791	------	2,288,227
1915	180,538	------	1,678,756
1916	206,960	------	2,096,570
1917	192,269	29,348	2,532,721
1918	136,374	34,818	2,363,481
1919	156,328	36,026	3,087,067
1920	245,842	99,208	5,704,393
1921	238,022	67,100	5,570,875
1922	374,853	105,909	7,994,991
1923	397,754	122,534	9,738,082
1924	456,716	114,469	9,137,908
1925	361,094	105,491	7,503,976
1926	388,048	90,332	7,026,124
1927	374,111	75,116	6,516,077
1928	272,443	66,277	5,694,770
1929	327,011	66,713	5,607,410
1930	267,019	68,047	4,205,460
1931	151,545	51,988	2,560,415
1932	90,683	27,098	1,605,086
1933	76,905	25,814	1,520,481
1934	66,738	17,534	1,644,661
Totals	10,088,481	1,203,822	$132,735,538

CEMENT

Bibliography: State Mineralogist Reports VIII, IX, XII, XIV, XV, XVII, XVIII, XXI–XXVIII (inc.). Bulletin 38.

During 1934 there was a production in California of 8,936,085 barrels of cement valued at $12,445,616 f.o.b. plant, of which 3,600,153 barrels came from northern California plants and 5,335,932 barrels from southern California plants. The 1934 output was an increase over that of 1933 which was 7,284,031 barrels worth $10,331,375.

Shipments, during 1934, were made from ten plants in nine counties to the extent of 8,591,951 barrels valued at $12,417,337, as compared with those of the previous year, which were 7,369,947 barrels worth $10,520,083. There were operating during the year, five plants in northern California, one each in Calaveras, Contra Costa, Merced, San Mateo and Santa Cruz counties, which shipped 3,357,260 barrels of cement, and five plants in southern California, two in San Bernardino, and one each in Kern, Los Angeles,[1] and Riverside counties, which shipped 5,234,691 barrels. There were 1697 men employed in the above plants in 1934.

[1] The plant in Los Angeles County grinds clinker coming from Kern and San Bernardino counties, therefore the crude material is credited to the later two.

Cement Production of California, by Years.

'Portland' cement was first commercially produced in California in 1891; though in 1860 and for several years following, a natural hydraulic cement from Benicia was utilized in building operations in San Francisco.

"The Benicia Cement Company in 1859–60 was turning out 50 to 100 barrels of cement a day and San Francisco was using about 12,000 barrels a year. The mill price of the product was then $4 a barrel. By 1865, the San Francisco rate of consumption had increased to 100,000



Santa Cruz Portland Cement Company, at Davenport, Santa Cruz County.

Photo by Walter W. Bradley.

barrels yearly, brick buildings largely taking the place of frame structures, and the price of cement had fallen to $2.50 a barrel, about the same as it is today."[1]

The growth of the industry became rapid after 1902; since which time cement has continued to be an important factor in the industrial life of the state. Although the total cement figures, to date, are not of the same magnitude as those for gold and petroleum, it is interesting to note that the value of California's cement yield in the period 1920–1931 annually exceeded the value of her gold output.

[1] Monthly Review of Mercantile Trust Co. of Calif., Vol. XIII, No. 3, p. 55, Mar. 1924.

Cement Production of California, by Years

Year	Barrels	Value	Year	Barrels	Value
1891	5,000	$15,000	1914	5,109,218	$6,558,148
1892	5,000	15,000	1915	4,918,275	6,044,950
1893			1916	5,299,507	6,210,293
1894	8,000	21,600	1917	5,790,734	7,544,282
1895	16,383	32,556	1918	4,772,921	7,969,909
1896	9,500	28,250	1919	4,645,289	8,591,990
1897	18,000	66,000	1920	6,709,160	14,962,945
1898	50,000	150,000	1921	7,404,221	18,072,120
1899	60,000	180,000	1922	8,962,135	16,524,056
1900	52,000	121,000	1923	10,825,405	25,999,203
1901	71,800	159,842	1924	11,655,131	23,225,850
1902	171,000	423,600	1925	13,206,630	25,043,335
1903	640,868	968,727	1926	13,797,173	25,269,678
1904	969,538	1,539,807	1927	14,661,783	26,474,935
1905	1,265,553	1,791,916	1928	13,625,231	24,463,287
1906	1,286,000	1,941,250	1929	12,794,729	21,038,565
1907	1,613,563	2,585,577	1930	9,831,938	14,575,731
1908	1,629,615	2,359,692	1931	7,693,712	11,510,655
1909	3,779,205	4,969,437	1932	5,657,549	7,967,107
1910	5,453,193	7,485,715	1933	7,284,031	10,331,395
1911	6,371,369	9,085,625	1934	8,936,085	12,445,616
1912	6,198,634	6,074,661			
1913	6,167,806	7,743,024	Totals	219,422,884	$368,582,319

GRANITE

Bibliography: State Mineralogist Reports X, XII–XXVI (inc.), XXVIII. Bulletin 38.

The 1934 output of granite consisted of 60,762 cu. ft. of building stone valued at $212,114; 15,400 cu. ft. of monumental stone valued at $32,680; 200 linear ft. of curbing valued at $800; and 1735 cu. ft. of unclassified material, including a small amount of tuff and some volcanic rock, which was used as building stone and flagstone, having a value of $3,489; giving the total value for the year's yield at $249,083. This was a increase over the 1933 total, which was $183,706. The 1934 material came from sixteen quarries in eleven counties, four of which were in San Diego County; with two each in Fresno and Sonoma counties; and one each in Madera, Mariposa, Nevada, Placer, Plumas, Sacramento, San Luis Obispo, and Ventura counties. The material from San Luis Obispo, Sonoma and Ventura counties was tuff.

So far as possible, granite production has been segregated in the statement herewith into the various uses to which the product was put. It will be noted, however, that a portion of the output has been entered under the heading 'Unclassified.' This is necessary because of the fact that some of the producers have no way of telling to what specific use their stone was put after they had quarried and sold the same in the rough.

Varieties.

For building purposes, the granites found in California, particularly the varieties from Raymond in Madera County, Rocklin in Placer County, and near Porterville in Tulare County, are unexcelled by any similar stone found elsewhere. The quantities available, notably at Raymond and Porterville, are unlimited. Most of California's 'granite,' particularly that found in the Sierra Nevada Mountains, is technically 'granodiorite' (that is, both plagioclase and orthoclase feldspars are present).

Granites of excellent quality for building and ornamental purposes are also quarried in Riverside and San Diego counties. Near Lakeside,

San Diego County, there is a fine-grained, 'silver gray' granite of uniform texture and color, especially suited for monumental and ornamental work.

The Fresno County stone is a dark, hornblende diorite, locally called 'black granite,' whose color permits of a fine contrast of polished and unpolished surfaces, making it particularly suitable for monumental and decorative purposes. There is also a similar 'black granite' in Tulare County, near Success.



California (Madera County) granite, in new City Hall at Los Angeles.
Photo by Walter W. Bradley.

Granite Production of California, by Years.

The value of granite produced, annually, since 1887 has been as follows:

Year	Value	Year	Value
1887	$150,000	1912	$362,975
1888	57,000	1913	981,277
1889	1,329,018	1914	628,786
1890	1,200,000	1915	227,928
1891	1,300,000	1916	535,339
1892	1,000,000	1917	221,997
1893	531,322	1918	139,861
1894	228,816	1919	220,743
1895	224,329	1920	495,732
1896	201,004	1921	725,901
1897	188,024	1922	676,643
1898	147,732	1923	760,081
1899	141,070	1924	1,211,046
1900	295,772	1925	1,853,859
1901	519,285	1926	655,332
1902	255,239	1927	1,398,143
1903	678,670	1928	763,996
1904	467,472	1929	1,169,271
1905	353,837	1930	855,477
1906	344,083	1931	636,741
1907	373,376	1932	398,676
1908	512,923	1933	183,706
1909	376,834	1934	249,083
1910	417,898		
1911	355,742	Total value	$27,002,339

LIME

Bibliography: Reports XIV, XV, XVII–XXIX (inc.) Bulletin 38.

In California during 1934 there was an output of lime to the amount of 32,500 short tons valued at $309,765, coming from two plants each in El Dorado, San Bernardino and Santa Cruz counties, and one each in Alameda and Tuolumne counties. The above figures showed an increased value although there was a slight decrease in amount as compared with that of 1933, which were 33,425 tons worth $271,619.

So far as we have been able to segregate the data, these figures include mainly only such lime as is used in building operations; though they do include a small proportion of calcined lime employed in agriculture and the chemical industries, the figures for which were not separable. A portion is hydrated lime. Limestone utilized in sugar making for smelter flux, as a fertilizer, and other special industrial uses, are classified under 'Industrial Materials.' That consumed in cement manufacture is included in the value of cement.

Lime Production of California, by Years.

The following tabulation gives the amounts and value of lime produced in California by years since 1894 when compilation of such records was begun by the State Mining Bureau. The figures for quantity have been recalculated from 'barrels', as shown in the earlier reports, to 'tons' for the years 1894–1922 (inc.):

Year	Tons	Value	Year	Tons	Value
1894	37,350	$318,700	1916	49,364	$390,475
1895	39,776	386,094	1917	50,073	311,380
1896	30,275	261,505	1918	43,684	461,315
1897	28,780	252,900	1919	42,070	552,043
1898	29,786	254,010	1920	46,314	557,232
1899	29,985	314,575	1921	46,353	610,619
1900	31,252	283,699	1922	57,875	671,747
1901	31,738	334,688	1923	70,894	788,834
1902	44,866	369,616	1924	62,029	703,355
1903	49,659	418,280	1925	61,922	685,528
1904	57,945	571,749	1926	63,568	670,837
1905	61,700	555,322	1927	60,498	631,497
1906	68,927	763,060	1928	56,616	547,919
1907	68,422	756,376	1929	42,834	417,101
1908	39,639	379,243	1930	47,662	452,084
1909	52,075	577,824	1931	36,189	360,523
1910	47,951	477,683	1932	27,510	254,223
1911	42,959	390,988	1933	33,425	271,619
1912	52,212	464,440	1934	32,500	309,765
1913	61,344	528,547			
1914	43,996	378,663	Totals	1,917,770	$18,972,362
1915	35,653	286,304			

MAGNESITE

Bibliography: State Mineralogist Reports XII–XV (inc.), XVII–XXVII (inc.), XXX. Bulletins 38, 79, 91. U. S. Geol. Surv., Bulletins 355, 540. Min. Res. 1913, Pt. II, pp. 450–453. Min. & Sci. Press, Vol. 114, p. 237. "Magnesite"—Hearings before Comm. on Ways and Means, House of Repr., on H. R. 5218, June 16, 17, and July 17, 1919. Eng. Soc. W. Penn., Proc. 1913, Vol. 29, pp. 305–388, 418–444. Eng. & Min. Jour.-Pres., Vol. 114, July 29, and Dec. 2, 1922. U. S. Tariff Comm., "Crude

and Caustic Calcined Magnesite. A Preliminary Statement of Information,'' May 19, 1926.

The production of crude magnesite in California during 1933 came from a single property each in Santa Clara and Stanislaus counties, both being operated by the same company. The annual details are concealed under the 'Unapportioned' item to conceal the output of this single operator. Practically all was shipped in the calcined form.

The 1934 output showed an increase in both quantity and value from the 1933 figures. The 1932–1933 output showed a total of 40,303 short tons of crude magnesite valued at $282,325, of which only a small amount was sold as such. Most of this material was calcined. The operators' reports show that a total of 17,400 short tons of calcined material, valued at $524,350 rail shipping point, was shipped during 1932–1933, dead-burned and periclass for refractories and material for the plastic trade. From two to two and one-half tons of crude material are required to make one ton of calcined. The average price for crude magnesite reported in 1934 was $6.50 per ton, compared with $5.60 per ton in 1933; $10.00 per ton in 1932; $8.45 per ton in 1931; $10.04 per ton in 1930; and $10.32 per ton in 1929.

In California the known deposits are mostly in the metamorphic rocks of the Coast Ranges and the Sierra Nevada, being associated with serpentine areas. The notable exceptions are the sedimentary deposits at Bissell in Kern County and at Afton in San Bernardino County. Several thousand tons have been shipped from the Bissell deposit; and small shipments have been made from the Afton property.

Imports.

The tariff act of 1930 placed the following import duties on magnesite: Crude magnesite 15/32¢ per lb., caustic-calcined magnesite 15/16¢ per lb., dead-burned and grain magnesite, not suitable for manufacture into oxychloride cements, 23/40¢ per lb.; magnesite brick ¾¢ per lb., and 10 per cent ad valorem. The figures of imports for 1934, as published by the U. S. Bureau of Foreign and Domestic Commerce, show a total of 24,523 short tons valued at $404,751, as compared with 25,370 tons worth $375,061 in 1933.

Total Magnesite Production of California.

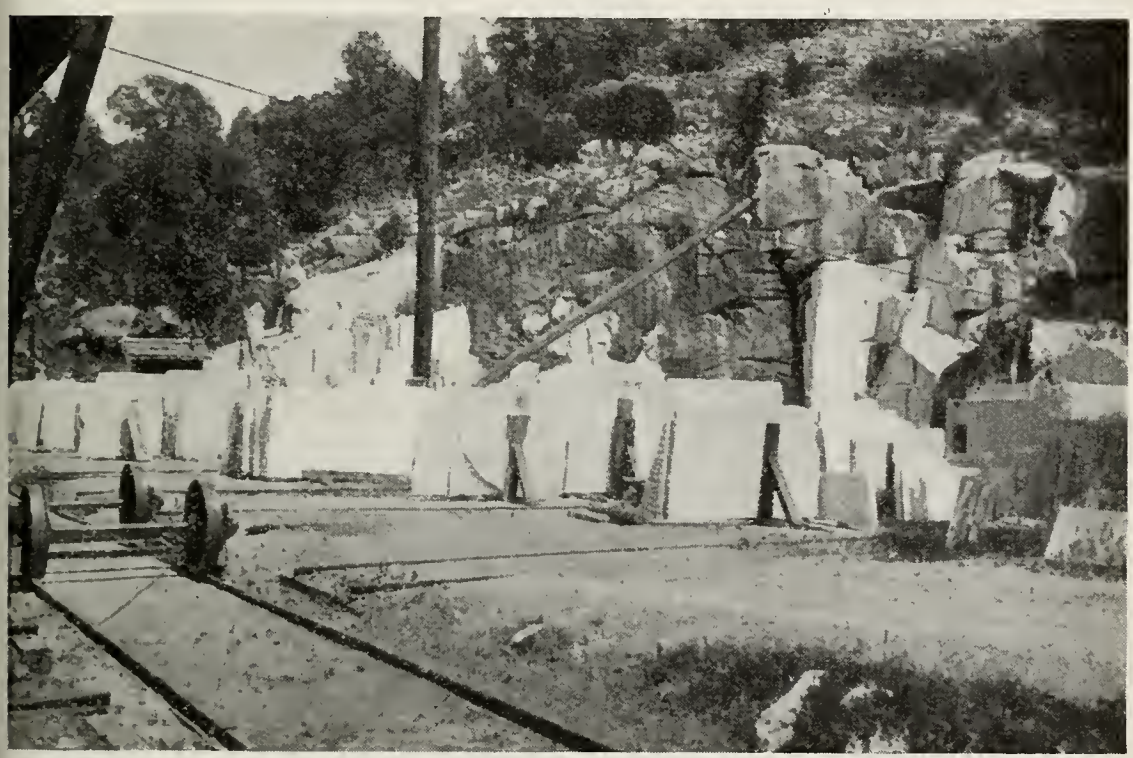
The first commercial production of magnesite in California was made in the latter part of 1886 from the Cedar Mountain district,[1] southeast of Livermore, Alameda County. Shipments amounting to 'several tons' or 'several carloads' were sent by rail to New York; but there is apparently no exact record of the amount for that first year. The statistical records of the State Mining Bureau began with the year 1887, and the table herewith shows the figures for amount and value, annually, from that time. Shipments of magnesite from Napa County began in 1891 from the Snowflake Mine; from the Red Mountain deposits in Santa Clara County, in 1899; and from Tulare County in 1900.

[1] See U. S. Geol. Surv.; Mineral Resources of U. S., 1886, pp. 6 and 696.

Total Magnesite Production of California

Year	Tons	Value	Year	Tons	Value
1887	600	$9,000	1912	10,512	$105,120
1888	600	9,000	1913	9,632	77,056
1889	600	9,000	1914	11,438	114,380
1890	600	9,000	1915	30,271	283,461
1891	1,500	15,000	1916	154,052	1,311,893
1892	1,500	15,000	1917	209,648	1,976,227
1893	1,093	10,930	1918	83,974	803,492
1894	1,440	10,240	1919	44,696	452,094
1895	2,200	17,000	1920	83,695	1,033,491
1896	1,500	11,000	1921	47,837	511,102
1897	1,143	13,671	1922	55,637	594,665
1898	1,263	19,075	1923	73,963	946,643
1899	1,280	18,480	1924	67,236	900,183
1900	2,252	19,333	1925	64,623	872,944
1901	4,726	43,057	1926	50,915	587,642
1902	2,830	20,655	1927	46,093	577,887
1903	1,361	20,515	1928	45,645	501,590
1904	2,850	9,298	1929	47,269	488,014
1905	3,933	16,221	1930	38,681	388,472
1906	4,032	40,320	1931	21,576	182,283
1907	6,405	57,720	1932	40,303	282,325
1908	10,582	80,822	1933		
1909	7,942	62,588	1934	*	*
1910	16,570	113,887			
1911	8,858	67,430	Totals	1,325,806	$13,709,206

* Combined under "Unapportioned"



Stock-pile in yard of Columbia Marble Company, near Columbia, Tuolumne County.

Photo by Walter W. Bradley.

MARBLE

Bibliography: State Mineralogist Reports XII–XV (inc.), XVII-XXX (inc.). Bulletin 38. U. S. Bur. of Mines Bull. 106.

The 1934 production of marble in California was valued at $10,579 (including some onyx and travertine from Solano County and a small

amount of limestone used as building stone and flagstone coming from an operator in Santa Barbara County). The marble came from a single quarry in Tuolumne County. The 1934 output showed a decrease in value from that of 1933, which was worth $23,198.

California has many beautiful and serviceable varieties of marble, suitable for almost any conceivable purpose of construction or decoration. In the decorative class are deposits of onyx marble of beautiful coloring and effects. There is also serpentine marble suitable for electrical switchboard use.

Marble Production of California, by Years.

Data on annual production since 1887, as compiled by the State Mining Bureau, follows. Previous to 1894 no records of amounts were preserved.

Total Production of Marble in California, by Years

Year	Cubic feet	Value	Year	Cubic feet	Value
1887		$5,000	1912	27,820	$74,120
1888		5,000	1913	41,654	113,282
1889		87,030	1914	25,436	48,832
1890		80,000	1915	22,186	41,518
1891		100,000	1916	25,954	50,280
1892		115,000	1917	24,755	62,950
1893		40,000	1918	[a]17,428	49,898
1894	38,441	98,326	1919	25,020	74,482
1895	14,864	56,566	1920	[b]29,531	92,899
1896	7,889	32,415	1921	30,232	98,395
1897	4,102	7,280	1922	38,321	127,792
1898	8,050	23,594	1923	28,015	124,919
1899	9,682	10,550	1924	[b]31,579	140,253
1900	4,103	5,891	1925	35,664	116,105
1901	2,945	4,630	1926	34,806	119,999
1902	19,305	37,616	1927	[b]42,308	103,689
1903	84,624	97,354	1928	[b]34,324	82,190
1904	55,401	94,208	1929	[b]72,881	93,661
1905	73,303	129,450	1930	[b]65,775	82,194
1906	31,400	75,800	1931	[b]37,776	81,760
1907	37,512	118,066	1932	[b]25,506	42,505
1908	18,653	47,665	1933	[b]9,039	23,178
1909	79,600	238,400	1934	[b]7,185	10,759
1910	18,960	50,200			
1911	20,201	54,103	Total value		$3,469,804

[a] Includes onyx and serpentine.
[b] Includes onyx and travertine.

ONYX and TRAVERTINE

Bibliography: State Mineralogist Reports XII–XV (inc.), XVII, XVIII, XXI, XXIII. Bulletin 38.

Onyx and travertine are known to exist in a number of places in California, but there has been only a small and irregular production since the year 1896. In 1934 there was one producer of travertine in Solano County. The 1934 output showed an increase in both quantity and value from that of 1933, the figures of which are combined with marble. This material is used in terrazzo, auto gear-shift handles, bases for fountain-pen desk sets, and other ornamental purposes.

Onyx Production of California, by Years.

Production by years has been as follows:

Year	Value	Year	Value
1887	*	1923	$2,510
1888	$900	1924	*
1889	900	1925	16,120
1890	900	1926	7,575
1891	1,500	1927	*
1892	2,400	1928	*
1893	1,800	1929	*
1894	27,000	1930	*
1895	20,000	1931	*
1896	12,000	1932	*
1918	24,000	1933	*
1919	*	1934	*
1920			
1921	1,294	Total value	$122,219
1922	3,320		

* See under Marble

SANDSTONE

Bibliography: State Mineralogist Reports XII-XV, XVII, XVIII, XXI, XXIII, XXVI-XXVIII (inc.). Bulletin 38. U. S. Bur. of Mines, Bull. 124.

An unlimited amount of high-grade sandstone is available in California, but the wide use of concrete in buildings of every character, as well as the popularity of a lighter-colored building stone, has curtailed production in this branch of the mineral industry during recent years almost to the vanishing point. In 1934 a total of 21,738 cu. ft. of sandstone valued at $14,245, was quarried in California and came from ten properties in Contra Costa, Los Angeles, Monterey, Napa, and San Luis Obispo counties; compared with 25,980 cu. ft. valued at $10,888 for 1933.

Practically all of the material was flagstone which is used in garden walks, fountains, walls and fireplaces to give effect to Spanish and English types of homes. The material reported from Monterey and San Luis Obispo counties is in reality an indurated shale of the Monterey series, of a cream color and utilized as a building stone. Part of the material coming from Los Angeles County was schist and indurated shale.

A large portion of the sandstone was sold for landscape work and used as stepping stones for walks and for fountains, walls, etc.

Sandstone Production of California, by Years.

Amount and value, so far as contained in the records of this Bureau, are presented herewith, with total value from 1887 to date:

Year	Cubic feet	Value	Year	Cubic feet	Value
1887		$175,000	1912	66,487	$22,574
1888		150,000	1913	62,227	27,870
1889		175,598	1914	111,691	45,322
1890		100,000	1915	63,350	8,438
1891		100,000	1916	17,270	10,271
1892		50,000	1917	31,090	7,074
1893		26,314	1918	900	400
1894		113,592	1919	5,400	3,720
1895		35,373	1920	10,500	2,300
1896		28,379	1921	10,150	2,112
1897		24,086	1922	900	1,100
1898		46,384	1923	7,000	13,000
1899	56,264	103,384	1924	6,700	3,600
1900	378,468	254,140	1925	14,704	14,362
1901	266,741	192,132	1926	34,100	17,500
1902	212,123	142,506	1927	22,900	205,400
1903	353,002	585,309	1928	134,100	43,250
1904	363,487	567,181	1929	177,655	49,881
1905	302,813	483,268	1930	160,704	56,404
1906	182,076	164,068	1931	110,244	30,960
1907	159,573	148,148	1932	41,793	13,286
1908	93,301	55,151	1933	25,980	10,888
1909	79,240	37,032	1934	21,738	14,245
1910	165,971	80,443			
1911	255,313	127,314	Total value		$4,568,759

SERPENTINE

Bibliography: State Mineralogist Report XV. Bulletin 38.

Serpentine has not been produced in California to a very large extent at any time. A single deposit, that on Santa Catalina Island, has yielded the principal output to date. Some material was shipped from there in 1917 and 1918, being the only output recorded since 1907. It was used for decorative building purposes and for electrical switchboards. As there was but a single operator, the figures were combined with those of marble output for those years.

Serpentine Production of California, by Years.

The following table shows the amount and value of serpentine from 1895 as recorded by this bureau:

Serpentine Production in California, by Years

Year	Cubic feet	Value	Year	Cubic feet	Value
1895	4,000	$4,000	1904	200	$2,310
1896	1,500	6,000	1905		
1897	2,500	2,500	1906	847	1,694
1898	750	3,000	1907	1,000	3,000
1899	500	2,000	1917	[a]	[a]
1900	350	2,000	1918	[b]	[b]
1901	89	890	1919		
1902	512	5,065			
1903	99	800	Totals	12,347	$33,259

[a] Under 'Unapportioned.'
[b] See under Marble.

SLATE

Bibliography: State Mineralogist Reports XV, XVIII, XXIV, XXVIII. Bulletin 38. U. S. Geol. Surv., Bull. 586. U. S. Bur. of Mines, Bull. 218.

Slate was first produced in California in 1889. Up to and including 1910 such production was continuous, but since then it has been irregular. Large deposits of excellent quality are known in the state, especially in El Dorado, Calaveras and Mariposa counties, but the demand has been light owing principally to competition of cheaper roofing materials.

The production of slate in California for 1934 amounted to 5065 short tons valued at $24,245 f.o.b. rail-shipping point and came from a single property each in El Dorado, Inyo and Tuolumne counties. The 1934 figures showed a decrease in both amount and value from those of the previous year which was 5343 tons worth $31,958. Practically all of this slate was crushed and used for roofing granules.

Total Production of Slate in California.

A complete record of amount and value of slate produced in California follows:

Year	Squares	Value	Year	Squares	Value
1889	4,500	$18,089	1909	6,961	$45,660
1890	4,000	24,000	1910	1,000	8,000
1891	4,000	24,000	1911		
1892	3,500	21,000	1915	1,000	5,000
1893	3,000	21,000	1916		
1894	1,800	11,700	1920	8	80
1895	1,350	9,450	1921		
1896	500	2,500	1922	200	2,400
1897	400	2,800	1923		
1898	400	2,800	1926	[a]	7,371
1899	810	5,900	1927	[b]2,686	17,960
1900	3,500	26,250	1928	[b]4,075	31,263
1901	5,100	38,250	1929	*	
1902	4,000	30,000	1930	[b]8,220	71,347
1903	10,000	70,000	1931	*	
1904	6,000	50,000	1932	[b]8,234	55,182
1905	4,000	40,000	1933	[b]5,343	31,958
1906	10,000	100,000	1934	[b]5,065	24,245
1907	7,000	60,000			
1908	6,000	60,000	Total value		$923,205

* Annual details concealed under 'Unapportioned.'
[a] Quantity not shown as both 'squares' and 'tons' included.
[b] Tons.

MISCELLANEOUS STONE

Bibliography: State Mineralogist Reports XII–XXVIII (inc.). Bulletin 38; also annual statistical bulletins from 1915 to date.

'Miscellaneous stone' is the name used throughout this report as the title for that branch of the mineral industry covering crushed rock of all kinds, paving blocks, sand and gravel, and pebbles for grinding mills. The foregoing are very closely related from the standpoint of the producer; therefore it has been found to be most satisfactory to group these items as has been done in recent reports of this Bureau. So far as it has been possible to do so, crushed rock production has been subdivided into the various uses to which the product was put. It will be noted, however, a very large percentage of the output has been

tabulated under the heading 'Unclassified.' This is necessary because of the fact that many of the producers have no way of telling to what specific use their rock was put (or at least the proportions to each use) after they have quarried and sold the same to distributors and contractors.

In addition to amounts produced by commercial firms, both corporations and individuals, there is hardly a county in the State but uses more or less gravel and broken rocks on its roads. Of much of this, particularly in the country districts, there is no definite record kept.

During 1934 the output of sand and gravel showed an increase in both amount and value over that of the year 1933, while crushed rock showed a decrease. This resulted in a total value of $7,131,330 for 'miscellaneous stone' during 1934 as compared with $6,871,581 for 1933. As in the past several years Los Angeles County lead all others in the annual output of these products, its 1934 yield being worth $1,220,639 (compared with $1,841,946 in 1933); followed by Alameda County second with $1,090,371; Contra Costa County third with $408,412; followed in turn by Ventura, Napa, Sacramento, San Diego, San Benito, Santa Clara, and Mariposa counties.

Paving Blocks.

There was a small output of paving blocks in California during 1934 coming from a single property each in Napa and Sacramento counties. The annual details are concealed under the 'Unapportioned' item so as not to reveal production of either operator.

The paving block industry has decreased materially of recent years, practically to the vanishing point, because of the increased construction of smoother pavements demanded by motor vehicle traffic. The blocks made in Solano County were of basalt; those from Sonoma are of basalt, andesite, and some trachyte, while those from Madera, Placer, Riverside, San Bernardino, and San Diego are of granite; and those from San Mateo County a sandstone.

The amount and value of paving block production, annually, since 1887 has been as follows:

Year	Amount M	Value	Year	Amount M	Value
1887	*10,000	$350,000	1912	11,018	$578,355
1888	10,500	367,500	1913	6,364	363,505
1889	7,303	297,236	1914	6,053	270,598
1890	7,000	245,000	1915	3,285	171,092
1891	5,000	150,000	1916	1,322	54,362
1892	*3,000	96,000	1917	938	38,567
1893	2,770	96,950	1918	372	17,000
1894	2,517	66,981	1919	27	1,350
1895	2,332	73,338	1920	63	3,155
1896	4,161	77,584	1921	4	280
1897	1,711	35,235	1922	72	3,924
1898	1,144	21,725	1923	15	880
1899	305	7,861	1924	11	935
1900	1,192	23,775	1925	27	1,350
1901	1,920	41,075	1926		
1902	3,502	112,437	1927	41	2,057
1903	4,854	134,642	1928	25	1,658
1904	3,977	161,752	1929		
1905	3,408	134,347	1930		
1906	4,203	173,432	1931 [a]	66	5,900
1907	4,604	199,347	1932		
1908	7,660	334,780	1934	[a]	[a]
1909	4,503	199,803			
1910	4,434	198,916	Totals	135,838	$5,325,503
1911	4,141	210,819			

* Figures for 1887–1892 (inc.) are for Sonoma County only, as none are available for other counties during that period though Solano County quarries were then also quite active.

[a] Annual details concealed under 'Unapportioned.'

Grinding-Mill Pebbles.

The 1934 output of grinding-mill pebbles in California is combined under the 'Unapportioned' item to conceal the production of a single operator each in San Diego and Siskiyou counties.

The amount and value of grinding-mill pebbles, annually, follows:

Year	*Tons*	*Value*
1915	340	$2,810
1916	20,232	107,567
1917	21,450	90,538
1918	8,628	61,268
1919	2,607	19,272
1920	2,104	17,988
1921	247	1,418
1922	1,571	7,628
1923	2,650	14,936
1924	434	2,969
1925	215	1,385
1926	102	612
1927	288	1,800
1928	372	2,408
1929 } * 1930 }	166	1,225
1931 } * 1932 }	25	211
1933 } * 1934 }	300	3,018
Totals	61,731	$267,053

* Annual details concealed under 'Unapportioned.'

Sand and Gravel.

A considerable part of the gravel excavated is passed through grading and washing plants, and the material over 2 inches in size is crushed. Much of it is utilized in concrete mixtures. Most of the gravel used for road surfacing and repairs as well as that for railroad ballast is creek-

run or pit-run material which is spread upon the roads without undergoing any grading or washing.

The distribution of the 1934 output of sand and gravel by counties is given in the following table:

County	*Tons*	*Value*
Alameda [a, e]	7,061,317	$948,845
Amador	2,340	1,125
Butte	32,426	22,634
Calaveras	10,890	7,890
Colusa	137,500	34,625
Contra Costa [a]	72,844	49,536
Del Norte	1,656	914
Glenn	61,321	30,608
Humboldt	153,158	37,677
Imperial	17,920	8,805
Inyo	12,873	19,081
Kern	74,866	41,918
Kings	8,550	2,560
Los Angeles [b, c]	1,333,840	730,548
Madera	1,913	4,100
Marin	11,300	3,750
Mariposa	5,144	3,241
Mendocino	14,307	6,864
Merced	17,000	8,100
Modoc	13,725	5,150
Mono	112,428	77,806
Monterey [a, b, c, d]	86,149	94,476
Napa	6,705	2,340
Nevada	2,500	625
Orange	82,075	50,576
Placer	13,567	5,477
Riverside [a, b, d]	140,592	84,688
Sacramento [a]	173,861	136,482
San Bernardino	162,662	92,663
San Diego [a, b, d]	167,604	148,166
San Joaquin	121,148	59,830
San Luis Obispo [a]	46,200	11,860
Santa Barbara	60,512	51,602
Santa Clara	325,546	94,148
Santa Cruz	131,485	75,500
Shasta	12,956	13,543
Sierra	3,315	3,015
Siskiyou	81,622	46,726
Sonoma	252,252	93,265
Stanislaus	65,113	43,249
Tehama	22,603	14,637
Trinity	8,637	7,793
Tulare	84,849	45,337
Tuolumne	3,252	1,833
Ventura [a]	248,820	177,767
Yolo	65,500	26,050
Yuba	74,061	31,099
Alpine, El Dorado, Fresno, Lake, Lassen, Plumas, San Mateo,[a] Solano *	106,283	78,266
Totals	11,707,187	$3,536,790

* Combined to conceal the output of a single operator in each.
[a] Includes molding sand.
[b] Includes blast sand.
[c] Includes roofing granules.
[d] Includes filter sand.
[e] Includes a large amount of sand pumped from San Francisco Bay to make fill.

Included in the above is a total of 24,565 tons of molding sand valued at $55,066 coming from two properties in Riverside County; and one each in Alameda, Contra Costa, Monterey, Sacramento, San Diego, San Luis Obispo, San Mateo, and Ventura counties. The 1934 yield showed an increase compared with 1933, which was 17,516 tons worth $39,722.

Crushed Rock.

To list the kinds and varieties of rock utilized commercially under this heading would be to run almost the entire gamut of the classification scale. Much depends on the kind available in a given district.

Those which give the most satisfactory service are the basalts and other hard, dense, igneous rocks which break with sharp, clean edges. In many localities, river-wash boulders form an important source of such material. In such cases, combined crushing and washing plants obtain varying amounts of sand and gravel along with the crushed sizes. In Sacramento and Butte counties the tailings piles from the gold dredgers are the basis of like operations.

The values given are based on the selling price, f.o.b. cars, barges, or trucks, at the quarry.

Crushed Rock Production, by Counties, for 1934

County	Macadam and ballast		Rubble and riprap		Concrete		Unclassified		Totals	
	Tons	Value	Tons	Value	Tons	Value	Tons	Value	Tons	Value
Alameda	4,093	$3,666	165,000	$40,000	*	*	87,455	$85,456	256,548	$129,122
Alpine	17,875	9,384							17,875	9,384
Amador	20,594	10,990							20,594	10,990
Butte	38,369	25,099			27,810	$25,095	17,042	8,143	83,221	58,337
Calaveras	18,150	10,395					*	*	18,150	10,395
Contra Costa	100,578	63,225	50,099	43,738	*	*	254,054	195,293	404,731	302,256
Del Norte	82,077	71,597	3,640	1,372					85,717	72,969
El Dorado	1,965	4,700	250	1,200					2,215	5,900
Humboldt	10,190	12,110	1,117	584					11,307	12,694
Imperial	47,300	36,075	7,972	3,186					55,272	39,261
Kern	5,630	4,250			*	*	*	*	5,630	4,250
Lake	24,450	24,450			100	100	6,979	698	31,529	25,248
Los Angeles	[b]8,640	23,350	1,836	23,543	111,494	65,807	[b]543,071	377,391	665,041	490,091
Madera	37,290	47,970	1,823	1,520					39,113	49,490
Marin	*	*	45,752	60,044	48,807	47,807	*	*	94,559	107,851
Mariposa	198,950	179,350	8	10	159	159	*	*	199,117	179,519
Mendocino	7,597	7,160			346	277			7,943	7,437
Merced	42,594	30,543							42,594	30,543
Modoc	36,800	36,000							36,800	36,000
Monterey					1,010	2,096	*	*	1,010	2,096
Napa	141,074	154,412	*	*					141,074	154,412
Nevada	86,835	150,332	180	75					87,015	150,407
Placer	8,000	1,400	4,196	3,536	13,500	23,000			25,696	27,936
Riverside	18,170	23,760	40,014	27,284			*	*	58,184	51,044
Sacramento	43,172	27,988	4	4	8,000	9,000	74,265	59,820	125,441	96,812
San Benito	*	*	514	780	2,300	1,677	[b]14,520	3,630	17,334	6,087
San Bernardino	690	660	75,485	50,345			*	*	76,175	51,005
San Mateo	*	*	12,000	7,250	1,706	3,157	2,100	2,375	15,806	12,782
Santa Clara	126,000	63,000			24,954	22,934	16,502	10,876	167,456	96,810
Shasta	[b]186,752	131,631					3,793	1,896	190,545	133,527
Sierra	10,310	10,950	150	75					10,460	11,025
Sonoma	5,753	4,248	690	1,003			*	*	6,443	5,251
Tehama	30,580	23,420	260	370					30,840	23,790
Trinity	69,819	52,949	1,670	1,780					71,489	54,729
Tulare	31,455	62,698	3,370	4,540	42,165	27,300			76,990	94,538
Tuolumne	220	635	689	3,110					909	3,745
Ventura					126,615	114,078			126,615	114,078
Yolo			31,500	11,800					31,500	11,800

Marin, Orange[b], San Benito, San Francisco, San Joaquin, San Mateo, Santa Cruz, Siskiyou*	463,392	279,619							463,392	279,616
Napa, San Diego, Santa Cruz			111,070	102,476					111,070	102,476
Alameda, Contra Costa, Kern, San Diego, San Francisco, Santa Cruz					173,623	187,386			173,623	187,386
Calaveras[a], Fresno, Inyo[a], Kern, Marin, Mariposa[a], Monterey, Orange, Riverside, San Bernardino[a], San Joaquin, Santa Cruz, Solano, Sonoma, Stanislaus							354,065	341,448	354,065	341,448
Totals	1,925,364	$1,588,016	559,289	$389,625	582,589	$529,873	1,373,846	$1,087,026	4,441,088	$3,594,540

* Combined to conceal the output of operators in each.
[a] Includes granules for roofing and terrazzo.
[b] Includes decomposed granite.

Miscellaneous Stone Production of California, by Years.

The amount and value, annually, of crushed rock (including macadam, ballast, rubble, riprap, and that for concrete), and sand and gravel, since 1893, follow:

Crushed Rock, Sand and Gravel, by Years

Year	Tons	Value	Year	Tons	Value
1893	371,100	$456,075	1915	10,879,497	$4,609,278
1894	661,900	664,838	1916	9,951,089	4,009,590
1895	1,254,688	1,095,939	1917	8,069,271	3,505,662
1896	960,619	839,884	1918	6,641,144	3,325,889
1897	821,123	600,112	1919	6,919,188	3,678,322
1898	1,177,365	814,477	1920	9,792,122	6,782,414
1899	964,898	786,892	1921	10,914,145	7,834,640
1900	789,287	561,642	1922	13,049,644	10,366,231
1901	530,396	641,037	1923	19,840,301	15,379,838
1902	2,056,015	1,249,529	1924	21,451,129	15,962,476
1903	2,215,625	1,673,591	1925	23,819,137	17,407,113
1904	2,296,898	1,641,877	1926	24,987,606	19,859,261
1905	2,621,257	1,716,770	1927	25,126,691	18,912,994
1906	1,555,372	1,418,406	1928	27,471,794	17,328,044
1907	2,288,888	1,915,015	1929	27,104,618	17,840,159
1908	3,998,945	3,241,774	1930	23,514,168	16,430,027
1909	5,531,561	2,708,326	1931	15,848,313	11,848,531
1910	5,827,828	2,777,690	1932	11,361,564	7,183,643
1911	6,487,223	3,610,357	1933	11,181,156	6,871,581
1912	8,044,937	4,532,598	1934	16,148,275	7,131,330
1913	9,817,616	4,823,056			
1914	9,288,397	3,960,973	Totals	373,635,790	$257,997,881

A comparison of the above table of annual production of these materials with the similar table for cement (see *ante*) reveals the fact that the important growth of the crushed rock and gravel business has been coincident with the rapid development of the cement industry from the year 1902.

CHAPTER FIVE

INDUSTRIAL MATERIALS

Bibliography: State Mineralogist Reports XII–XXX (inc.). Bulletin 38. Min. & Sci. Press, Vol. 114, March 10, 1917. Spurr and Wormser, "Marketing of Metals and Minerals." "Non-Metallic Minerals," by R. B. Ladoo. See also under each substance.

The following mineral substances have been arbitrarily arranged under the general heading of 'Industrial Materials,' as distinguished from those which have a clearly-defined classification, such as metals, salines, structural materials, etc.

These materials, many of which are mineral earths, are, with four or five exceptions, as yet produced on a comparatively small scale. The possibilities of development along several of these lines are large, and with increasing transportation and other facilities, together with steadily growing demands, the future for this branch of the mineral industry in California is promising. There is scarcely a county in the State but might contribute to the output.

Up to within the last few years, at least, production has been in the majority of instances dependent upon more or less of a strictly local market, and the annual tables show the results of such a condition, not only in the widely-varying amounts of a certain material produced from year to year, but in widely-varying prices of the same material.

The more important of these minerals thus far exploited, so far as shown by value of the output, are barytes, bentonite (fuller's earth), pottery clay, diatomite, dolomite, gypsum, limestone, mineral water, pumice and volcanic ash, pyrite, silica, and soapstone and talc.

To the industrial group were added during 1933, carbon dioxide gas, which is now being produced from wells in Imperial County and wollastonite, a mineral from which mineral-wool is made, coming from Kern County. Also fluorspar was again shipped, for the first time since 1918.

This group, as a whole, showed a decrease in total value from $3,658,249 in 1933 to $4,276,566 in 1934.

The following table gives the comparative figures for the amounts and value of industrial minerals produced in California during the years 1933 and 1934:

Substance	1933		1934		Increase+ Decrease— Value
	Amount	Value	Amount	Value	
Barytes	8,405 tons	$49,595	21,769 tons	$125,514	$75,919+
Bentonite (fuller's earth)	4,605 tons	60,621	6,168 tons	69,325	8,704+
Clay (pottery)	141,629 tons	211,711	190,510 tons	245,900	34,189+
Dolomite	54,456 tons	176,575	*	*	*—
Gems		690		2,456	1,766+
Gypsum	59,235 tons	120,451	58,149 tons	113,606	6,845—
Limestone	207,371 tons	487,712	198,057 tons	461,139	26,573—
Mineral water	15,650,406 gals.	719,746	19,882,436 gals.	1,071,197	351,451+
Pumice and volcanic ash	8,243 tons	61,087	9,951 tons	54,248	6,839—
Silica	70,329 tons	266,520	70,432 tons	296,643	30,123+
Soapstone and talc	14,450 tons	153,668	13,920 tons	158,606	4,938+
Sulphur	*	*	4,412 tons	67,656	*+
Unapportioned		[a]1,349,873		[b]1,610,276	260,403+
Total values		$3,658,249		$4,276,566	
Net increase					$618,317+

* Included under 'Unapportioned.'

[a] Includes carbon dioxide, diatomite, feldspar, fluorspar, graphite, mica, mineral paint, pyrite, sillimanite-adnalusite-cyanite group, sulphur, wollastonite.

[b] Includes asbestos, carbon dioxide, diatomite, dolomite, feldspar, fluorspar, pyrite, sillimanite-andalusite-cyanite group, wollastonite.

ASBESTOS

Bibliography: State Mineralogist Reports XII–XIX (inc.), XXII, XXVII (inc.), XXIX. Bulletins 38, 91. Canadian Dept. of M., Mines Branch Bulletin 69. Min. and Sci. Press, April 10, 1920, pp. 531–533. Eng. & Min. Jour.-Press, Vol. 113, pp. 617–625, 670–677. Asbestology, Vol. 5, No. 7, July, 1927.

During 1934 there was a small output of asbestic reported in California, this material was used in roofing and plasters and came from Napa County. There was no production of asbestos in 1933. The annual figures are combined under the 'Unapportioned' item to conceal the output of a single operator.

Asbestos Production of California, by Years.

Total amount and value of asbestos production in California since 1887, as given in the records of this Bureau, are as follows:

Year	Tons	Value	Year	Tons	Value
1887	30	$1,800	1912	90	$2,700
1888	30	1,800	1913	47	1,175
1889	30	1,800	1914	51	1,530
1890	71	4,260	1915	143	2,860
1891	66	3,960	1916	145	2,380
1892	30	1,830	1917	136	10,225
1893	50	2,500	1918	229	9,903
1894	50	2,250	1919–1920	131	6,240
1895	25	1,000	1921	410	19,275
1896			1922	50	1,800
1897			1923	20	200
1898	10	200	1924	70	4,750
1899	30	750	1925–1926	25	1,650
1900	50	1,250	1927–1928	13	1,160
1901	110	4,400	1929–1930	219	6,175
1902			1931		
1903			1932–1934	309	3,274
1904	10	162			
1905	112	2,625	Totals	3,392	$145,984
1906	70	3,500			
1907	70	3,500			
1908	70	6,100			
1909	65	6,500			
1910	200	20,000			
1911	125	500			

* Annual details concealed under 'Unapportioned.'

BARYTES

Bibliography: State Mineralogist Reports XII, XIV, XV, XVII, XXI–XXVII (inc.). Bulletins 38, 87. Eng. & Min. Jour.-Press, Vol. 114, p. 109, July 15, 1922; Vol. 115, pp. 319–324, Feb. 17, 1923. U. S. Bureau of Mines, Inform. Circ. 6221, 6223.

During 1934 there was a commercial production of crude barytes in California amounting to a total of 21,769 short tons valued at $125,514 f.o.b. rail-shipping point, as compared with the 1933 output of 8,405 tons worth $49,595. The 1934 output came from Mariposa, Plumas, San Bernardino and Tulare counties with a single producer in each. This material was consumed in the manufacture of lithopone, in heavy-gravity oil-well drilling-mud, fillers, and barium chemicals.

The Tariff Act of 1930 placed a duty on foreign imported barytes ore, crude or unmanufactured, of $4 per ton; ground or otherwise manufactured, of $7.50 per ton.

Present quotations for barytes (93% $BaSO_4$) vary from $6 to $7 (Calif. $7) per ton, crude, f.o.b. rail-shipping point. Most baryte has to be washed and acid treated to remove iron stains or other impurities before being suitable for paint use.

Known occurrences of this mineral in California are located in Inyo, Los Angeles, Mariposa, Monterey, Nevada, San Bernardino, Shasta, Santa Barbara and Tulare counties. The deposits at El Portal, in Mariposa County, have given the largest commercial production to date, in part witherite (barium carbonate, $BaCO_3$). Witherite has also been found in Shasta County, but no shipments have yet been made from the deposit.

Total Barytes Production of California.

The first recorded production of barytes in California, according to the statistical reports of the State Mining Bureau, was in 1910. The annual figures are as follows:

Year	Tons	Value	Year	Tons	Value
1910	860	$5,640	1924		
1911	309	2,207	1925		
1912	564	2,812	1926	4,978	$38,165
1913	1,600	3,680	1927	17,993	90,617
1914	2,000	3,000	1928	13,406	55,888
1915	410	620	1929	26,796	168,829
1916	1,606	5,516	1930	19,783	133,107
1917	4,420	25,633	1931	27,832	156,647
1918	100	1,500	1932	8,507	49,409
1919	1,501	18,065	1933	8,405	49,595
1920	3,029	20,795	1934	21,769	125,514
1921	901	4,809			
1922	3,370	18,925	Totals	173,064	$997,041
1923	2,925	16,058			

BENTONITE (Fuller's Earth)

Bibliography: State Mineralogist Reports XIV, XVII, XVIII, XXI, XXIII, XXV–XXVI (inc.). Bulletins 38, 91. U. S. Bureau of Mines, Bulletin 71. Eng. & Min. Jour.-Press, Vol. 121, pp. 837–842, May 22, 1926.

During 1934 there was produced and shipped in California 6,168 short tons of bentonite (fuller's earth) valued at $69,325, coming from

seven properties, three of which were in San Bernardino County, two in Inyo County and one each in Kern and San Benito counties. The 1934 output showed an increase, as compared with that of 1933, which was 4,605 tons worth $60,621.

Previous to 1931 the Division of Mines classed this material under the heading of 'fuller's earth,' but it was thought advisable to change the name to bentonite, owing to the fact that much bentonite is employed in uses that can not be classed as fuller's earth and therefore has been classified in these reports under pottery clay. This was somewhat confusing. Bentonite is the name commonly applied to the clays of the montmorillonite and halloysite group ('rock soap').

Fuller's earth includes many kinds of unctuous clays. It is usually soft, friable, earthy, nonplastic, white and gray to dark green in color, and some varieties disintegrate in water. Production has come mainly from Calaveras and Solano counties, with other deposits noted also in Riverside, Fresno, Inyo and Kern counties.

The Tariff Act of June 21, 1930, placed a duty of $1.50 a ton on foreign produced imported fuller's earth.

Bentonite Production of California by Years.

Bentonite including a small amount of fuller's earth was first produced commercially in this state in 1899, and the total amount and value of the output since that time are as follows:

Year	Tons	Value	Year	Tons	Value
1899	620	$12,400	1918	37	$333
1900	500	3,750	1919	385	3,810
1901	1,000	19,500	1920	600	6,000
1902	987	19,246	1921	1,185	8,295
1903	250	4,750	1922	6,606	48,756
1904	500	9,500	1923	3,650	55,125
1905	1,344	38,000	1924	5,290	67,295
1906	440	10,500	1925	5,280	91,842
1907	100	1,000	1926	23.552	250,192
1908	50	1,000	1927	13,018	154,764
1909	459	7,385	1928	53.323	501,743
1910	340	3,820	1929	15,541	170,563
1911	466	5,294	1930	12,522	177,964
1912	876	6,500	1931	13,960	222,583
1913	460	3,700	1932	4,295	57,670
1914	760	5,928	1933	4,605	60,621
1915	692	4,002	1934	6,168	69,325
1916	110	550			
1917	220	2,180	Totals	163,199	$1,441,797

CARBON DIOXIDE GAS

Bibliography: State Mineralogist Report XII.

Carbon dioxide gas was first produced commercially in California in 1894. This material came from a drift on the 575 level of the Santa Isabel shaft of the New Almaden Quicksilver Mine at Almaden, Santa Clara County. The drift was bulkheaded and a pipe was placed through the bulkhead for the gas to be drawn off, it then being compressed into cylinders and used in the manufacture of soda water.

In 1933 carbon dioxide gas was again produced, this time from wells drilled near Niland, Imperial County. On November 1, 1934, a dry-

ice plant was put into operation for condensation of the carbon dioxide produced from the above wells.

Carbon Dioxide Gas Production in California, by Years

Year	M cu. ft.	Value
1894	80	$4,072
1895	800	12,000
1896	81	1,300
1897	---	------
1933} 1934}	*	*
Totals	961	$17,372

* Annual details concealed under 'Unapportioned'

CLAY (Pottery)

Bibliography: State Mineralogist Reports I, IV, IX, XII–XV, XVIII–XXVIII (inc.), XXX. Bulletins 38, 99. Preliminary Report No. 7. U. S. Bureau of Standards, Tech. Paper No. 262.

At one time or another in the history of the State, pottery clay has been mined in thirty-three of its counties. Of these, 17 contributed in 1934. In this report, 'pottery clay' refers to all clays used in the manufacture of red and brown earthenware, china and sanitary ware, flower pots, floor, faience and ornamental tiling, architectural terra cotta, sewer pipe, drain and roof tile, etc., and the figures for amount and value are relative to the crude material at the pit, without reference to whether the clay was sold in the crude form or was immediately used in the manufacture of any of the above finished products by the producer. It does not include clay used in making brick and hollow building blocks.

There are many other important uses for clay besides pottery manufacture. Among these may be enumerated paper, cotton goods, and chemicals. Clays of the montmorillonite and halloysite group ('rock soap') are being utilized successfully in the manufacture of soaps and for filtering oils and as oil-well drilling mud, also as an earth filler in irrigating ditches which run through porous ground.

During 1934 there was a total of 51 properties in 17 counties which reported an output of 190,510 tons of pottery clay having a total value of $245,900 f.o.b. rail-shipping point for the crude material, as compared with 51 properties in 19 counties, producing 141,629 tons worth $211,711 in 1933.

Because of the fact that a given product often requires a mixture of several different clays, and that these are not all found in the same pit, it is necessary for most clay-working plants to buy some part of their raw materials from other localities. For these reasons, in compiling the clay industry figures, much care is required to avoid duplications. So far as we have been able to segregate the figures, from the data sent in by the operatives, we have credited the clay output to the counties from which the raw material originated; and have deducted tonnages used in brick manufacture, as bricks are classified separately. herein.

A tabulation of the direct returns from the producers, by counties, for the year 1934 is shown herewith:

POTTERY CLAY IN 1934

County	*Tons*	*Value*	*Used in the manufacture of*
Amador[a]	28,620	$50,833	Architectural terra cotta; fire-clay products and refractories; chimney; drain and sewer pipe; floor, mantel and roofing tile; electrical porcelain and various.
Kern	19,526	30,142	Oil-well drilling-mud; fire-clay products and refractories; sanitary ware and electric porcelains and various.
Los Angeles	13,763	7,772	Architectural terra cotta; conduit and segment blocks; electrical porcelain and red earthenware; refractories; chimney, drain and sewer pipe; vents; floor, mantel and roofing tile; art pottery and various.
Orange	12,740	31,328	Stoneware, refractories, vents; drain, floor and mantel tile and various.
Placer	38,975	60,555	Architectural terra cotta; chimney, drain and sewer pipe; faience, floor, mantel and roofing tile; red earthen-ware; electrical porcelain, sanitary ware and various.
Riverside	16,081	35,101	Conduit, sewer and drain pipe; red earthen-ware; faience, floor, mantel and roofing tile and various.
Santa Clara	701	442	Sewer pipe, art pottery; drain, floor, mantel and roofing tile; stoneware and various.
San Bernardino	1,185	7,844	Floor and roofing tile; stoneware, sanitary ware, art pottery, refractories and various.
Alameda, Calaveras, Contra Costa, Fresno, Humboldt, Monterey, San Diego, Stanislaus, Ventura[b] *	58,919	21,883	Drain, roofing and mantel tile; saggers; electrical porcelain; refractory, red earthen-ware, garden furniture, oil-well drilling-mud and various.
Totals	190,510	$245,900	

* Combined to conceal the output of a single operator in each.
[a] Includes firesand.
[b] Includes clay and shale used for oil-well drilling-mud.

POTTERY CLAY PRODUCTS

The values of the various pottery clay products made in California during 1934 totaled $4,258,303, as compared with $4,125,651, in 1933, their distribution being shown in the following tabulation:

Product	*Number of producers*	*Tons*	*Value*
Architectural terra cotta	5	2,529	$304,135
Chimney pipe and flue lining	7	2,227	76,861
Drain pipe	17	3,509	48,440
Roofing tile	21	19,690	257,776
Electrical porcelain	4	----	177,913
Red earthenware	7	----	124,089
Stoneware and chemical stoneware	6	----	190,955
Sanitary ware and plumbing fixtures	3	----	629,839
Floor, faience, mantel and hand-made tile	29	----	753,405
Conduit pipe	4	2,307	54,723
Ground fire clay and high temperature cement	8	7,568	101,092
Sewer pipe	6	27,253	618,144
Art pottery and chinaware	9	----	737,026
Miscellaneous: garden furniture, specialties, gas stove radiance, clay shapes, flower pots, light weight aggregate, floor cement, fire tile, sillimanite refractories, glazed tile, gas-house tank blocks, and molding clay	15	----	183,905
Total value			$4,258,303

Important increases were shown by drain pipe, red earthen-ware, conduit, ground fire clay and high temperature cement, sewer pipe,

art pottery and chinaware. All other groups showed a declined value from their 1933 total.



Architectural tile and porcelain from Californian clays, at Agua Caliente, Lower California, Mexico.

Photo by Walter W. Bradley.

Pottery Clay Production of California, by Years.

Amount and value of crude pottery clay output in California since 1887 are given in the following table:

Year	Tons	Value	Year	Tons	Value
1887	75,000	$37,500	1912	199,605	$215,683
1888	75,000	37,500	1913	231,179	261,273
1889	75,000	37,500	1914	179,948	167,552
1890	100,000	50,000	1915	157,866	133,724
1891	100,000	50,000	1916	134,636	146,538
1892	100,000	50,000	1917	166,298	154,602
1893	24,856	67,284	1918	112,423	166,788
1894	28,475	35,073	1919	135,708	245,019
1895	37,660	39,685	1920	203,997	440,689
1896	41,907	62,900	1921	225,120	362,172
1897	24,592	30,290	1922	277,232	473,184
1898	28,947	33,747	1923	376,863	697,841
1899	40,600	42,700	1924	417,928	651,857
1900	59,636	60,956	1925	537,587	674,376
1901	55,679	39,144	1926	801,461	806,509
1902	67,933	74,163	1927	867,419	872,661
1903	90,972	99,907	1928	887,807	1,394,970
1904	84,149	81,952	1929	839,949	1,127,527
1905	133,805	130,146	1930	938,586	795,517
1906	167,267	162,283	1931	332,680	408,931
1907	160,385	254,454	1932	167,284	204,790
1908	208,042	325,147	1933	141,629	211,711
1909	299,424	465,647	1934	190,510	245,900
1910	249,028	324,099			
1911	224,576	252,759	Totals	11,076,648	$13,701,730

DIATOMITE (Diatomaceous Earth)

Bibliography: State Mineralogist Reports II, XII–XV (inc.), XVII–XXVIII (inc.), Bulletins 38, 67, 91. Am. Inst. Min. Eng., Bull. 104, August, 1915, pp. 1539–1550. U. S. Bur. of Mines, Rep. of Investigations: Serial No. 2431, Jan. 1923. Eng. & Min. Jour.-Press, Vol. 115, pp. 1152–1154, June 30, 1923.

Diatomite, also known as diatomaceous earth, infusorial earth, tripolite and kieselguhr, is very light (when dry a cubic foot weighs 18 to 20 pounds) and extremely porous, chalk-like materials composed of pure silica (chalk, being calcareous) which have been laid down under water and consist of the remains of microscopical infusoria and diatoms. The former are animal remains, and the latter are from plants.

The most important deposits in California thus far known are



Brick-cutting machine on diatomite deposit of Johns-Manville Company, Lompoc, Santa Barbara County.

Photo by Walter W. Bradley.

located in Monterey, Orange, San Luis Obispo, and Santa Barbara counties. The Santa Barbara material is diatomaceous and is of a superior quality, particularly for filtration uses which bring the higher prices. Infusorial or diatomaceous earths are also found in Fresno, Kern, Los Angeles, Plumas, San Benito, San Bernardino, San Joaquin, Shasta, Sonoma, and Tehama counties.

As about 60 per cent of the California output is from a single operator, we have concealed the exact figures under the 'Unapportioned' item in the State and county totals. There were six operators during 1934 in Fresno, Los Angeles, Monterey, Santa Barbara, and Stanislaus

counties. The shipments during the year showed an increase in total tonnage and value compared with 1933.

The material shipped was utilized for insulation of both heat and sound, filtration, paint, pigment, cement admixture, fillers, abrasives and for clarification of gasoline and kerosene.

Total Production of Diatomite in California.

The first recorded production of these materials in California occurred in 1889; total amount and value of output, to date, are as follows:

Year	Tons	Value	Year	Tons	Value
1889	39	$1,335	1913	8,645	$35,968
1890			1914	12,840	80,350
1891			1915	12,400	62,000
1892			1916	15,322	80,649
1893	50	2,000	1917	24,301	127,510
1894	51	2,040	1918	35,963	189,459
1895			1919	40,200	217,800
1896			1920	60,764	1,056,260
1897	5	200	1921		
1898			1922	*90,739	1,016,675
1899			1923		
1900			1924	*193,064	5,729,736
1901			1925		
1902	422	2,532	1926		
1903	2,703	16,015	1927	*275,403	1,995,923
1904	6,950	112,282	1928		
1905	3,000	15,000	1929		
1906	2,430	14,400	1930	*300,017	4,848,661
1907	2,531	28,948	1931		
1908	2,950	32,012	1932		
1909	500	3,500	1933	*203,228	3,104,154
1910	1,843	17,617	1934		
1911	2,194	19,670			
1912	4,129	17,074	Totals	1,302,683	$18,827,770

* Annual details concealed under 'Unapportioned.'

DOLOMITE

Bibliography: State Mineralogist Reports XV, XVII, XXVII, XXVIII.

The 1934 production came from one property each in Inyo and Monterey counties, the annual details are placed under the 'Unapportioned' item to conceal the output of either operator. The 1934 output showed a decrease from that of 1933 which was 54,456 tons worth $176,575 coming from three properties in Inyo County and one property each in Los Angeles and Monterey counties. The material shipped was utilized for steel-furnace flux and refractories, plaster, stucco, dash-coat, terrazzo, art stone, and for manufacture of CO_2.

Dolomite Production of California, by Years.

Previous to the 1915 statistical report of the State Mining Bureau, dolomite was included under limestone, as the two minerals are closely related chemically; but since dolomite, as such, has been found to have certain distinctive applications, we here give it a separate classification.

Amount and value of the output of dolomite, annually, have been as follows:

Year	Tons	Value
1915	4,192	$14,504
1916	13,313	46,566
1917	27,911	66,416
1918	24,560	79,441
1919	24,502	67,953
1920	42,388	132,791
1921	31,195	99,155
1922	52,409	114,911
1923	69,519	142,615
1924	28,843	71,271
1925	42,852	104,900
1926	68,640	119,313
1927	45,976	79,442
1928	38,379	85,342
1929	58,644	156,928
1930 } * 1931 }	66,564	161,245
1932	35,275	40,956
1933	54,456	176,575
1934	*	*
Totals	729,618	$1,760,324

* Annual details concealed under 'Unapportioned.'

FELDSPAR

Bibliography: State Mineralogist Reports XV, XVII–XXVIII (inc.), XXX. Bulletins 67, 91. U. S. Bureau of Mines, Bulletin 92. Eng. & Min. Jour.-Press, Vol. 115, pp. 535–538, Mar. 24, 1923.

The 1934 feldspar production showed an increase in both amount and value over that of 1933 and is under the 'Unapportioned' item to conceal the output of a single operator in San Diego County. The 1933 and 1934 yield amounted to 2,655 short tons valued at $30,611.

Total Feldspar Production in California.

Total amount and value of feldspar production in California since the inception of the industry are given in the following table, by years:

Year	Tons	Value	Year	Tons	Value
1910	760	$5,720	1924	9,055	$68,112
1911	740	4,560	1925	8,165	59,615
1912	1,382	6,180	1926	7,300	56,400
1913	2,129	7,850	1927	10,932	86,101
1914	3,530	16,565	1928	14,628	93,745
1915	1,800	9,000	1929	13,327	78,404
1916	2,630	14,350	1930	5,014	35,654
1917	11,792	46,411	1931	4,795	59,921
1918	4,132	22,061	1932	2,294	15,988
1919	1,272	12,965	1933 } 1934 }	2,655	30,611
1920	4,518	26,189			
1921	4,349	28,343			
1922	4,587	37,109	Totals	133,886	$903,649
1923	11,100	81,800			

* Annual details concealed under 'Unapportioned.'

FLUORSPAR

Bibliography: State Mineralogist Reports XVII, XVIII, XXIV, XXVI. Bulletins 67, 91. Eng. & Min. Jour.-Press, Vol. 177, pp. 489–492, Mar. 22, 1924.

During 1934 in California there was an output of fluorspar coming from San Bernardino County. The annual details are combined under the 'Unapportioned' item to conceal the output of a single operator. This material was shipped to steel mills to be used as a flux. The combined production of 1933 and 1934 amounted to a total of 227 tons worth $3,631.

Fluorspar, or calcium fluoride, CaF_2, is one of the most important nonmetallic minerals from an industrial standpoint. About 80 per cent of the commercial mineral is prepared in the 'gravel' form and utilized as a flux in the manufacture of steel, for which use no substitute has yet been found.

The California deposits have been reported in Los Angeles, Mono, Riverside and San Bernardino counties. A previous commercial production was made in 1917–1918, when a total of 79 tons valued at $991 was shipped from Riverside County.

Present quotations (Metal and Mineral Markets) are: not less than 85 per cent CaF_2 and not over 5 per cent SiO_2, $16 per ton; No. 2 lamp, $17.50 per ton.

GEMS

Bibliography: State Mineralogist Reports II, XIV, XV, XVII, XVIII, XX, XXI–XXVIII (inc.), XXX. Bulletins 37, 67, 91. U. S. G. S., 'Mineral Resources of the U. S.'; Bull. 603, p. 208. Bull. Dept. Geol. Univ. of Cal., Vol. 5, pp. 149–153, 331–380. Am. Jour. Sci., Vol. 31, p. 31.

The production of gem materials in California has been somewhat irregular and uncertain since 1911. The compilation of complete statistics is difficult owing to widely-scattered places at which stones are gathered and marketed, for the most part in a small way. The gem material reported in California during 1934 had a total value of $2,456 in the rough. The 1934 output came from Amador, Butte, Fresno, Inyo, Kern, Mono, Riverside, San Bernardino, and Tulare counties and consisted of diamonds, topaz, beryl, mottled jasper, rose quartz, rutile, blue agate, onyx, and vesuvianite. The above showed an increased value over the 1933 output, which was worth $690.

Total Production of Gem Materials in California.

The value of the gem output in California annually since the beginning of commercial production is as follows:

Year	Value	Year	Value
1900	$20,500	1919	$5,425
1901	40,000	1920	36,056
1902	162,100	1921	10,954
1903	110,500	1922	1,312
1904	136,000	1923	13,220
1905	148,500	1924	4,800
1906	497,090	1925	10,663
1907	232,642	1926	9,049
1908	208,950	1927	7,035
1909	193,700	1928	22,200
1910	237,475	1929	26,850
1911	51,824	1930	3,540
1912	23,050	1931	5,607
1913	13,740	1932	4,961
1914	3,970	1933	690
1915	3,565	1934	2,456
1916	4,752		
1917	3,049	Total	$2,256,875
1918	650		

GRAPHITE

Bibliography: State Mineralogist Reports XIII, XIV, XV, XVII, XXVI (inc.), XXX. Bulletins 67, 91. U. S. G. S., Min. Res., 1914, Pt. II.

Graphite (also called plumbago) has been produced from time to time in the State, coming principally from Sonoma and Los Angeles counties.

Occurrences of graphite has been reported at various times from Calaveras, Fresno, Imperial, Inyo, Los Angeles, Mendocino, San Bernardino, San Diego, Siskiyou, Sonoma and Tuolumne counties. From 1931 to 1933 there was a small production of graphite from a property in Los Angeles County. The annual details are concealed under 'Unapportioned,' owing to there having been but a single operator.

During 1934 there was no graphite produced in California.

Graphite Production of California, by Years.

According to the records of the State Mining Bureau, the graphite production of California, by years, has been as follows:

Year	*Pounds*	*Value*
1901	128,000	$4,480
1902	84,000	1,680
1903	-------	------
1913	2,500	25
1914	-------	------
1915	-------	------
1916	29,190	2,335
1917		
1918		
1919	*770,000	37,225
1920		
1921		
1922	*624,000	26,160
1923	-------	------
1925		
1926	*76,000	13,120
1927		
1928	-------	------
1931		
1932	156,000	1,950
1933	*	
1934	-------	------
Totals	2,269,690	$86,975

* Annual details concealed under 'Unapportioned,' on account of a single producer.

GYPSUM

Bibliography: State Mineralogist Reports XIV, XV, XVII, XVIII, XXII, XXIII, XXV–XXVIII (inc.), XXX. Bulletins 38, 67, 91. U. S. Geol. Surv., Bull 223, 413, 430, 697. U. S. Bur. of Standards, Circular No. 281.

During the year 1934 there were shipments of gypsum in California amounting to 58,149 short tons valued at $113,606, coming from two properties, each in Fresno and Riverside counties and a single property each in Imperial and Merced counties. This was a decrease in both quantity and value from the 1933 output, which was 59,235 tons worth $120,451.

Total Production of Gypsum in California.

Production of gypsum annually in California since such records have been compiled by this Bureau is as follows:

Year	Tons	Value	Year	Tons	Value
1887	2,700	$27,000	1912	37,529	$117,388
1888	2,500	25,000	1913	47,100	135,050
1889	3,000	30,000	1914	29,734	78,375
1890	3,000	30,000	1915	20,200	48,953
1891	2,000	20,000	1916	33,384	59,533
1892	2,000	20,000	1917	30,825	56,840
1893	1,620	14,280	1918	19,695	37,176
1894	2,446	24,584	1919	19,813	50,579
1895	5,158	51,014	1920	20,507	92,535
1896	1,310	12,580	1921	37,412	78,875
1897	2,200	19,250	1922	47,084	188,336
1898	3,100	23,600	1923	86,410	289,136
1899	3,663	14,950	1924	25,569	53,210
1900	2,522	10,088	1925	107,613	172,444
1901	3,875	38,750	1926	114,868	211,337
1902	10,200	53,500	1927	94,630	292,090
1903	6,914	46,441	1928	104,790	200,567
1904	8,350	56,592	1929	140,844	396,951
1905	12,859	54,500	1930	116,865	243,507
1906	21,000	69,000	1931	88,354	199,198
1907	8,900	57,700	1932	46,867	93,818
1908	34,600	155,400	1933	59,235	120,451
1909	30,700	138,176	1934	58,149	113,606
1910	45,294	129,152			
1911	31,457	101,475	Totals	1,638,836	$4,552,987

LIMESTONE

Bibliography: State Mineralogist Reports IV, XII–XV (inc.), XVII–XXX (inc.). Bulletins 38, 91. Oregon Agr. College Extension Bulletin 305. Eng. and Min. Jour.-Press, Vol. 120, pp. 249–253.

'Industrial' limestone was produced by 20 operators in 9 counties in California during 1934 to the amount of 198,057 short tons valued at $461,139, as compared with the 1933 output, which was 207,371 tons worth $487,712. The 1934 yield came from five properties in Santa Clara County; four in El Dorado County; two each in Fresno, San Bernardino, Santa Cruz, and Tuolumne counties; and one each in Alameda, San Mateo and Ventura counties.

The amount here given does not include the limestone used in the manufacture of cement nor for macadam and concrete, nor of lime for building purposes; but accounts for that utilized as a smelter and foundry flux, for glass and sugar making, and other special chemical

and manufacturing processes. It also includes that utilized for fertilizers (agricultural 'lime'), 'roofing gravel,' paint and concrete filler, whiting for paint, putty, kalsomine, terrazzo, paving dust, chicken grit, carbon dioxide gas, 'paving compound,' facing dust for concrete pipe, also for rubber and magnesite mix. The material from Fresno and Ventura counties and one operator in Santa Clara County was marl; and that from Alameda, San Mateo and three operators in Santa Clara counties was shells, dredged from San Francisco Bay, all of which was ground and used for agricultural purposes and poultry grit. Of the total 'industrial' limestone produced in 1934, approximately 52,571 short tons worth $146,262 were used for agricultural purposes and poultry grit.

Distribution of the 1934 output of limestone was as follows:

County	*Tons*	*Value*
El Dorado	112,237	$152,422
Santa Clara [a] [b]	26,809	84,033
Alameda,[b] Fresno,[a] San Bernardino, San Mateo,[a] Santa Cruz, Tuolumne, and Ventura [a] *	59,011	224,684
Totals	198,057	$461,139

* Combined to conceal the output of individual operators in each.
[a] Includes marl.
[b] Includes shells.

Limestone Production of California, by Years.

The following tabulation gives the amounts and value of 'industrial' limestone produced in California by years since 1894 when compilation of such records was begun by the State Mining Bureau. These tonnages consist principally of limestone utilized for flux, glass and sugar making, agricultural, chemical, and other special industrial purposes. That utilized in cement manufacture is not included:

Year	Tons	Value	Year	Tons	Value
1894	15,420	$19,275	1916	187,521	$217,733
1895	71,355	71,690	1917	237,279	356,396
1896	68,184	71,112	1918	208,566	456,258
1897	36,796	38,556	1919	88,291	248,145
1898	27,686	24,548	1920	90,120	298,197
1899	30,769	29,185	1921	75,921	305,912
1900	32,791	31,532	1922	84,382	282,181
1901	76,937	99,445	1923	143,266	348,464
1902	71,422	90,524	1924	219,476	582,660
1903	125,919	163,988	1925	319,977	494,525
1904	40,207	87,207	1926	108,795	367,501
1905	192,749	323,325	1927	699 790	663,957
1906	80,262	162,827	1928	127,895	397,935
1907	230,985	406,041	1929	168,315	557,617
1908	273,890	297,264	1930	169,477	508,751
1909	337,676	419,921	1931	177,268	560,699
1910	684,635	581,208	1932	168,950	487,788
1911	516,398	452,790	1933	207,371	487,712
1912	613,375	570,248	1934	198,057	461,139
1913	301,918	274,455			
1914	572,272	517,713	Totals	8,227,687	$12,961,712
1915	146,324	156,288			

LITHIA

Bibliography: State Mineralogist Reports II, IV, XIV, XXI, XXX. Bulletins 38, 67, 91.

Lithia mica, lepidolite (a silicate of lithium and others), utilized in the manufacture of artificial mineral water, fireworks, glass, etc., has

been mined in San Diego County since 1899, except between 1905 and 1915, though there was none shipped in 1923, 1925, 1929–1933 (inc.). During 1930 there was a small amount of lepidolite mined in California, but none shipped. Some amblygonite, a lithium phosphate, is occasionally also obtained from pockets associated with the gem tourmalines.

Lithia mica total production in the State has been as follows:

Year	Tons	Value	Year	Tons	Value
1899	124	$4,600	1920	10,046	$153,502
1900	440	11,000	1921	*1,365	20,781
1901	1,100	27,500	1922		
1902	822	31,880	1923		
1903	700	27,300	1924	109	2,269
1904	641	25,000	1925		
1905	25	276	1926	*550	13,900
1906			1927		
1915	91	1,365	1928		
1916	71	1,065	1929		
1917	880	8,800			
1918	4,111	73,998	Totals	21,875	$417,636
1919	800	14,400			

* Annual details concealed under 'Unapportioned.'

MICA

Bibliography: State Mineralogist Reports II, IV, XXVI–XXVIII (inc.), XXX. Bulletins 38, 67, 91. U. S. Geol. Surv., Bull. 740; Min. Res. of U. S. Eng. & Min. Jour.-Press, Vol. 115, pp. 55–60, Jan. 13, 1923.

Sericite, a fine-grained variety of muscovite, has been produced continuously since 1929 in California, though there was no production of mica during 1934. The 1933 output came from a single property in Imperial County. The annual details are concealed in the 'Unapportioned' item so as not to reveal production of the operator. This type of material is used as a cheap grade of ground mica for roofing as a refractory, foundry facing, and decorative material to imitate snow.

Production of mica in California has been as follows:

Year	*Tons*	*Value*
1902	50	$2,500
1903	50	3,800
1904	50	3,000
1929		
1930 *	2,240	15,260
1931		
1932		
1933 *	1,957	13,963
1934	----	-----
Totals	4,347	$38,523

* Annual details concealed under 'Unapportioned."

MINERAL PAINT

Bibliography: State Mineralogist Reports XII–XIX (inc.), XXI, XXII–XXVIII (inc.). Bulletins 38, 91.

During 1934 there was no production of mineral paint in California. In 1933 there was a small amount of mineral paint shipped from a single property in Alameda County, the detail of which was concealed under the 'Unapportioned' item.

These materials have come from Alameda, Amador, Butte, Calaveras, Colusa, Los Angeles, Napa, Nevada, Placer, Riverside, Shasta, Sonoma,

Stanislaus and Ventura counties. There are also other deposits that may have possible commercial value, but as yet there have been no commercial shipments from El Dorado, Imperial, Kern, Kings, Lake, Mendocino, San Diego, Siskiyou, Trinity and Yuba counties, in which they are found.

Mineral Paint Production of California, by Years.

The first recorded production of mineral paint materials in the State was in the year 1890. The output, showing annual amount and value since that time, is given herewith:

Year	Tons	Value	Year	Tons	Value
1890	40	$480	1914	132	$847
1891	22	880	1915	311	1,756
1892	25	750	1916	643	3,960
1893	590	26,795	1917	520	2,700
1894	610	14,140	1918	728	4,738
1895	750	8,425	1919	1,780	17,055
1896	395	5,540	1920	779	8,477
1897	578	8,165	1921	446	4,748
1898	653	9,698	1922	1,620	13,277
1899	1,704	20,294	1923	1,049	11,773
1900	529	3,993	1924	532	5,234
1901	325	875	1925	669	6,969
1902	589	1,533	1926	569	5,846
1903	2,370	3,720	1927	919	9,592
1904	270	1,985	1928		
1905	754	4,025	1929	467	2,820
1906	250	1,720	1930	250	3,000
1907	250	1,720	1931		
1908	335	2,250	1932		
1909	305	2,325	1933	*	*
1910	200	2,040	1934		
1911	186	1,184			
1912	300	1,800	Totals	23,147	$222,098
1913	303	1,780			

* Annual details concealed under 'Unapportioned.'

MINERAL WATER

Bibliography: State Mineralogist Reports VI, XII–XVIII (inc.), XXI–XXIX (inc.). U. S. G. S., Water Supply Paper 338. Min. Res., 1914, 1916. 'Mineral Springs and Health Resorts of California,' by Dr. Winslow Anderson, 1890. U. S. Dept. of Agr., Bur. of Chem., Bulletin 91.

A widespread production of mineral water is shown annually in California. These figures refer to mineral water actually bottled for sale, or for local consumption. Water from some of the springs having a special medicinal value brings a price many times higher than the average shown, while in some cases the water is used merely for drinking purposes and sells for a nominal figure. Health and pleasure resorts are located at many of the springs. The waters of some of the hot springs are not suitable for drinking, but are very efficacious for bathing. From a therapeutic standpoint, California is particularly rich in mineral springs.

The commercial production of mineral water in California during 1934 amounted to 19,882,436 gallons valued at $1,071,197. This was an increase in both amount and value over the 1933 output which

was 15,650,406 gallons worth $719,746. The 1934 output was distributed as follows:

County	*Gallons*	*Value*
Lake	11,372	$11,005
Los Angeles	8,202,017	479,710
Napa	47,900	13,900
Sonoma	12,944	2,786
Butte, Calaveras, Colusa, Contra Costa, Marin, Orange, Placer, Riverside, San Bernardino, San Diego, San Francisco, San Luis Obispo, Santa Barbara, Siskiyou [a]	11,608,203	563,796
Totals	19,882,436	$1,071,197

[a] Combined to conceal output of operators in each.

The production above tabulated either came from springs or artesian wells, and was bottled, in part with artificial carbonation, but mostly natural, and sold for drinking purposes. A large part was used in the preparation of soft drinks with flavors.

Mineral Water Production of California, by Years.

Mineral water was bottled for sale, at the Napa Soda Springs, Napa County, as early as 1856,[1] and at other springs in California, notably The Geysers, Sonoma County, also at early dates; but there are no figures available earlier than the year 1887. Amounts and values, annually, since that year are shown herewith:

Year	Gallons	Value	Year	Gallons	Value
1887	618,162	$144,368	1912	2,497,794	$529,384
1888	1,112,202	252,990	1913	2,350,792	599,748
1889	808,625	252,241	1914	2,443,572	476,169
1890	258,722	89,786	1915	2,274,267	467,738
1891	334,553	139,959	1916	2,273,817	410,112
1892	331,875	162,019	1917	1,942,020	340,566
1893	383,179	90,667	1918	1,808,791	375,650
1894	402,275	184,481	1919	2,233,842	340,117
1895	701,397	291,500	1920	2,391,791	421,643
1896	808,843	337,434	1921	3,446,278	367,476
1897	1,508,192	345,863	1922	4,276,346	486,424
1898	1,429,809	213,817	1923	5,487,276	616,919
1899	1,338,537	406,691	1924	8,159,211	818,726
1900	2,456,115	268,607	1925	12,115,072	1,230,455
1901	1,555,328	559,057	1926	14,074,877	1,171,550
1902	1,701,142	612,477	1927	16,644,423	1,487,183
1903	2,056,340	558,201	1928	25,049,002	1,304,969
1904	2,430,320	496,946	1929	27,032,083	2,040,615
1905	2,194,150	538,700	1930	37,354,111	2,870,663
1906	1,585,690	478,186	1931	26,164,331	1,347,860
1907	2,924,269	544,016	1932	19,031,224	1,495,988
1908	2,789,715	560,507	1933	15,650,406	719,746
1909	2,449,834	465,488	1934	19,882,436	1,071,197
1910	2,335,259	522,009			
1911	2,637,669	590,654	Totals	291,735,964	$30,187,561

[1] Cronise, T. F., The natural wealth of California, p. 182, 1868.

PHOSPHATES

Bibliography: State Mineralogist Report XXI. Bulletins 67, 91.

No commercial production of phosphates has been recorded from California, though occasional pockets of the lithium phosphate, amblygonite, Li (AlF) PO_4, have been found associated with the gem tourmaline deposits in San Diego County. Such production has been classified under lithia.

PUMICE and VOLCANIC ASH

Bibliography: State Mineralogist Reports XII, XIV, XV, XVII, XVIII, XXII–XXVIII (inc.), XXX. Buletin 38. U. S. Bureau of Mines I. G. 6560. (See 'Tufa.')

The production of pumice and volcanic ash in California during the year 1934 amounted to 9951 short tons valued at $54,248, coming from three properties in Inyo County and one each in Imperial, Kern, Madera, Mono, Napa, San Luis Obispo, and Siskiyou counties. The 1934 output showed an increase in quantity over that of 1933, which was 8,242 tons and a decrease in value, which was $61,067. This is accounted for by the fact that the amount of lump pumice showed a decrease in amount while volcanic ash output showed a marked increase.

The material from one of the deposits in Inyo County and from Imperial, Mono, Napa, and Siskiyou counties was 2,566 tons of pumice and was used in acoustic plaster, light-weight aggregate in concrete, for abrasive purposes and for chicken-house litter. The product from two properties in Inyo and that from Kern, Madera and San Luis Obispo counties was 7,385 tons of volcanic ash or tuff variety and was employed in making soap, cleanser compounds, a large tonnage being utilized as a concrete filler in cement displacement, and in asphalt and as a carrier for dry agricultural sprays. The Kern County ash is going into the preparation of one of our popular and nationally advertised brands of cleanser compounds.

Pumice Production of California, by Years.

Commercial production of pumice in California was first reported to the State Mining Bureau in 1909, then not again until 1912, since which year there has been a small annual output, as indicated by the following table:

Year	Tons	Value	Year	Tons	Value
1909	50	$500	1923	2,936	$16,309
1910	----------	----------	1924	4,919	33,404
1911	----------	----------	1925	5,319	32,937
1912	100	2,500	1926	7,170	48,350
1913	3,590	4,500	1927	13,779	168,896
1914	50	1,000	1928	10,440	105,055
1915	380	6,400	1929	10,449	76,123
1916	1,246	18,092	1930	12,947	128,847
1917	525	5,295	1931	11,711	108,130
1918	2,114	28,669	1932	9,891	86,034
1919	2,388	43,657	1933	8,243	61,067
1920	1,537	25,890	1934	9,951	54,748
1921	406	6,310			
1922	613	4,248	Totals	120,754	$1,066,961

PYRITES

Bibliography: State Mineralogist Reports XVIII, XIX, XXII, XXV, XXVI, XXX. Bulletins 38, 91. Min. and Sci. Press, Vol. 144, pp. 825, 840.

During 1934 pyrite was shipped from a single property each in Alameda and Shasta counties. The annual details are placed in the 'Unapportioned' item to conceal the output of either operator. The 1934 production showed an increase in both quantity and value over that of 1933.

This material was mostly used in the manufacture of sulphuric acid for explosives and fertilizer. Some iron sulphate had been produced previously and was utilized directly in the preparation of an agricultural fertilizer and insecticide. The sulphur content ranged up to 50.8% S.

This does not include the large quantities of pyrite, chalcopyrite, and other sulphides which are otherwise treated for their valuable metal contents. Some sulphuric acid is annually made as a by-product in the course of roasting certain tonnages of Mother Lode auriferous concentrates while under treatment for their precious metal values.

Pyrites Production in California, by Years.

The total recorded pyrites production in California to date is as follows:

Year	Tons	Value	Year	Tons	Value
1898	6,000	$30,000	1918	128,329	$425,012
1899	5,400	28,620	1919	147,024	540,300
1900	3,642	21,133	1920	146,001	530,581
1901	4,578	18,429	1921	110,025	473,735
1902	17,525	60,306	1922	151,381	570,425
1903	24,311	94,000	1923	148,004	555,308
1904	15,043	62,992	1924	124,214	517,835
1905	15,503	63,958	1925	129,500	528,550
1906	46,689	145,895	1926	100,896	466,088
1907	82,270	251,774	1927	130,910	564,823
1908	107,081	610,335	1928	90,566	400,627
1909	457,867	1,389,802	1929	79,169	363,717
1910	42,621	179,862	1930	39,958	194,228
1911	54,225	182,954	1931	25,402	131,174
1912	69,872	203,470	1932} *	72,271	297,832
1913	79,000	218,537	1933}		
1914	79,267	230,058	1934	*	*
1915	92 462	293,148			
1916	120,525	372,969	Totals	3,057,856	$11,342,231
1917	111,325	323,704			

* Annual details concealed under 'Unapportioned'.

SHALE OIL

Bibliography: State Mineralogist Report XIX. U. S. Geol. Surv., Bulletins 322, 729. U. S. Bur. of Mines, Bull. 210. Eng. and Min. Jour.-Press, Vol. 118, No. 8, pp. 290–292, Aug. 23, 1924. Chem. & Met. Eng., Vol. 32, No. 6, Feb., 1925. Min. Congress Jour., Dec., 1924.

Two plants on a more or less experimental scale have operated in California, with commercial production beginning in a small way in 1922. The product, in part, was sold for utilization as a flotation oil in metallurgical work, and part consumed as fuel at the plants. There was no produciton reported for spring 1934.

Shale Oil Production of California, by Years

Year	*Barrels*	*Value*
1922} * 1923}	4,333	$44,262
1924} * 1925}	8,688	55,240
1926} * 1927}	8,819	9,998
1928	----	----
Totals	21,840	$109,500

* Annual details concealed under 'Unapportioned.'

SILICA (Sand and Quartz)

Bibliography: State Mineralogist Reports IX, XIV, XV, XVII, XVIII, XX–XXVIII (inc.). Bulletins 38, 67, 91.

We combine these materials because of the overlapping roles of vein quartz which is mined for use in glass making and as an abrasive, and that of silica sand which, although mainly utilized in glass manufacture, also serves as an abrasive. Both varieties are also utilized to some extent in fire-brick manufacture.

We do not include under this heading such forms of silica as: quartzite, sandstone, flint, tripoli, diatomaceous earth, nor the gem forms of 'rock crystal,' amethyst, and opal. Each of these has various industrial uses, which are treated under their own designations.

The production of silica in California during 1934 amounted to 70,432 short tons valued at $296,643 f.o.b. rail-shipping point, and came from two properties in Contra Costa County and one each in El Dorado, Monterey, Riverside and San Diego counties. The above was an increase in both amount and value as compared with the 1933 output, which was 70,329 tons worth $266,520. The 1934 output consisted of 69,597 tons of glass sand and 835 tons of vein and boulder quartz. In addition to the above output for 1934 there were several thousand tons of quartzite shipped from San Bernardino County to be used in the manufacture of silica brick. To avoid duplication, its amount and value is not added to the silica totals.

The glass sand came from Contra Costa, Monterey and Riverside counties. For making the higher grades of glass, deposits in Contra Costa County are replacing the sand imported from Belgium. Belgium sand has displaced local material in the manufacture of sodium silicate ('water glass'). There are various deposits of quartz in California which could be utilized for glass making, but to date they have not been so used owing to the cost of grinding and the difficulty of preventing contamination by iron while grinding.

Silica sand has been produced in the following counties of the State: Alameda, Amador, Contra Costa, El Dorado, Imperial, Inyo, Los Angeles, Mariposa, Mono, Monterey, Orange, Placer, Riverside, San Diego, San Joaquin and Tulare, the chief centers being Contra Costa, Amador, Monterey and Los Angeles counties. The industry is of limited importance, so far, because of the fact that much of the available material is not of a grade which will produce first-class colorless glass; for such, it must be essentially iron-free. Even a fractional per cent of iron imparts a green color to the glass.

The Tariff Act of June 21, 1930, placed a duty on sand, containing 95 per cent or more of *Silica* and not more than six-tenths of 1 per cent of oxide of iron and suitable for use in the manufacture of glass, of $2 per ton.

Total Silica Production in California.

Total silica production in California since the inception of the industry, in 1899, is shown below, being mainly sand:

Year	Tons	Value	Year	Tons	Value
1899	3,000	$3,500	1918	23,257	$88,930
1900	2,200	2,200	1919	18,659	101,600
1901	5,000	16,250	1920	25,324	96,793
1902	4,500	12,225	1921	10,569	49,179
1903	7,725	7,525	1922	9,874	31,016
1904	10,004	12,276	1923	7,964	30,420
1905	9,257	8,121	1924	6,808	35,006
1906	9,750	13,375	1925	12,498	96,780
1907	11,065	8,178	1926	30,010	104,317
1908	9,255	22,045	1927	24,636	94,762
1909	12,259	25,517	1928	14,814	66,679
1910	19,224	18,265	1929	18,686	79,210
1911	8,620	8,672	1930	17,802	71,380
1912	13,075	15,404	1931	43,330	182,769
1913	18,618	21,899	1932	33 997	136,324
1914	28,538	22,688	1933	70,329	266,520
1915	28,904	34,322	1934	70,432	296,643
1916	20,880	48,908			
1917	19,376	41,166	Totals	680,239	$2,159,864

SILLIMANITE-ANDALUSITE-CYANITE GROUP

Bibliography: State Mineralogist Reports XX, XXIII, XXIV, XXVII. Bulletins 67, 91. Dana's Mineralogy. U. S. Geol. Surv., Prof. Paper 110. U. S. Bureau of Mines, Inform. Circ. 6255. Eng. & Min. Jour.-Press, Vol. 120, pp. 91–94, 1925. Amer. Mineralogist, June, 1924.

Sillimanite and andalusite are both aluminum silicates (Al_2SiO_5), having the same composition and formula, but with slightly different physical characteristics. Though both crystallize in the orthorhombic system, their crystal habits are different. A massive deposit of andalusite, found in Dry Creek Canyon in the White Mountains of the Inyo Range, in Mono County, is being mined by the Champion Spark Plug Company of Detroit, Michigan. The material is shipped East and utilized in the manufacture of porcelain for automobile spark plugs, for other high-tension electric insulators, laboratory ware and porcelain. Porcelain made from these minerals can be subjected to sudden and extreme changes in temperature without damage.

Cyanite is also an aluminum silicate (Al_2SiO_5), of the same chemical composition as andalusite and sillimante, but crystallizing in the triclinic system. A deposit of cyanite is being mined in Imperial County, near Ogilby, by the Vitrefrax Corporation and shipments made to their refractory plant in Los Angeles.

Dumortierite, though different somewhat in composition from the above, being a basic aluminum silicate ($HAl_8BSi_3O_{20}$), has proved similar in behavior in ceramic work so that it is now being mixed with andalusite for electrical porcelains. A deposit of this mineral in Nevada is being mined for that purpose. Occurrences of massive dumortierite are known in Imperial and San Diego counties in this State and there may yet be some commercial possibilities for them.

Total Sillimanite Group Production of California, by Years

Year	Tons	Value
1922 1923 1924	*	4,584	$98,790
1925 1926	*	4,810	203,000
1927 1928	*	4,276	76,000
1929 1930	*	4,359	198,893
1931 1932	*	1,244	21,800
1933 1934	*	3,035	69,026
Totals		22,308	$667,509

* Annual details concealed under 'Unapportioned.'

SOAPSTONE and TALC

Bibliography: State Mineralogist Reports XII, XIV, XV, XVII–XXVII (inc.), XXX. Bulletins 38, 67, 91. U. S. Bur. of Mines, Bulletin 213. Rep. of Investigations, Serial No. 2253, May 1921.

The total output of talc and soapstone in California during 1934 amounted to 13,920 tons valued at $158,606. The 1934 figures showed a decrease in amount and an increased value as compared with those of 1933 which were 14,451 tons and $153,668. This is accounted for by the fact that a larger amount of high-grade talc was mined and less soapstone. Of the 1934 production, 12,550 tons were high-grade talc from Inyo and San Bernardino counties; this material was utilized mainly in toilet powder, paint, paper and rubber manufacture, and in ceramics. The remainder of 1,370 tons was soapstone and came from Butte and El Dorado counties.

The 'soapstone' grades were used mainly for roofing granules and as a filler in roofing paper, and part also in magnesite cement.

It is reported that California talc has replaced to some extent imported talc in the toilet trade on the basis of quality. The largest production of talc in the United States comes from Vermont and New York, and of massive soapstone from Virginia.

During 1934 imports of talc, steatite, etc., totaled 22,921 short tons valued at $368,014, as compared with 21,946 tons worth $383,951 during 1933, according to the United States Bureau of Foreign and Domestic Commerce.

The Tariff Act of 1930 places a duty on talc, steatite or soapstone and French chalk, crude or unground, of one-fourth of one cent per pound.

Talc Production of California, by Years.

Production was intermittent in the State up to 1912; but there has been a material growth since 1916, as shown in the following table:

Year	Tons	Value	Year	Tons	Value
1893	400	$17,750	1915	1,663	$14,750
1894			1916	1,703	9,831
1895	25	375	1917	5,267	45,279
1896			1918	11,760	85,534
1897			1919	8,764	115,091
1898			1920	11,327	221,362
1899			1921	8,752	130,078
1900			1922	13,378	197,186
1901	10	119	1923	17,439	252,661
1902	14	288	1924	16,179	242,770
1903	219	10,124	1925	15,465	239,084
1904	228	2,315	1926	17,004	255,645
1905	300	3,000	1927	16,218	164,744
1906			1928	18,668	251,372
1907			1929	18,676	193,493
1908	3	48	1930	15,861	154,258
1909	33	280	1931	13,472	109,940
1910	740	7,260	1932	10,690	122,880
1911			1933	14,451	153,668
1912	1,750	7,350	1934	13,920	158,606
1913	1,350	6,150			
1914	1,000	4,500	Totals	256,729	$3,177,791

STRONTIUM

Bibliography: State Mineralogist Report XXVI, XXVII. Bulletins 67, 91. U. S. G. S., Bull. 540; 660–I.

There has been no production of strontium minerals in California since 1918, though in that year both celestite ($SrSO_4$), and the carbonate, strontianite ($SrCO_3$) were shipped. The first recorded commercial output of strontium minerals in California was in 1916. The occurrence of the carbonate is particularly interesting and valuable, as it appears to be the only considerable deposit of commercial importance so far opened up in the United States. Shipments reported as averaging 80% $SrCO_3$ have been made. The deposit is associated with deposits of barite near Barstow, San Bernardino County. The carbonate has also been found in massive form near Shoshone, Inyo County. In addition to Imperial County, celestite is found near Calico and Ludlow, and in the Avawatz Mountains in San Bernardino County, but as yet undeveloped.

Production of strontium minerals in California, by years, has been as follows:

Year	Tons	Value
1916	57	$2,850
1917	3,050	37,000
1918	2,900	33,000
1919		
Totals	6,007	$72,850

SULPHUR

Bibliography: State Mineralogist Reports IV, XIII, XIV, XXV. Bulletins 38, 67, 91.

During 1934 there were shipments of sulphur in California amounting to 4,412 short tons valued at $67,656, which came from two properties in Inyo County and one in Alpine County. The 1934 output of sulphur was the largest annual recorded in this state.

The 1929–1931 output, which came from Colusa County, and was utilized in the manufacture of a fertilizer and for dusting for mildew. These were the commercial operations of mining sulphur. The last previous production was in 1923 and 1924 and came from Kern County. This mineral has been found to some extent in Alpine, Colusa, Imperial, Inyo, Kern, Lake, Sonoma, Tehama, and Ventura counties.

Total Production of Sulphur in California.

Sulphur was produced at the famous Sulphur Bank mine in Lake County, during the years 1865–1868 (inc.); following which the property became more valuable for its quicksilver. The Elgin quicksilver mine, near Wilbur Springs, Colusa County, is a similar occurrence.

Production of sulphur in California to date:

Year	*Tons*	*Value*
1865, 1866, 1867*	941	$53,500
1868 to 1922	----	------
1923, 1924*	185	4,071
1925 to 1928	----	------
1929, 1930, 1931*	265	9,025
1932, 1933*	1,991	32,838
1934	4,412	67,656
Totals	7,794	$167,090

* Annual details concealed under 'Unapportioned.'

WOLLASTONITE

Wollastonite was mined and shipped during 1934 in California from one property in Kern County. The annual details are concealed in the 'Unapportioned' item so as not to reveal the output of the single operator.

The first commercial production of wollastonite was made in 1933 from a deposit operated by John T. Thorndyke in the Radamacher District in Kern County, and was shipped from Cole's Siding to Los Angeles, where it is used to manufacture mineral wool. This is being done by a new process in an electric furnace where the material is melted without the use of a flux and then blown to a fine fiber or wool by compressed air from jets. The mineral wool is an excellent insulating material for sound, heat and cold, and the manufacturer expects to use large quantities in the proposed steel houses. This material, also, can be used in the manufacture of unbreakable glass. This is the first recorded commercial production of wollastonite in California, and apparently also the first in the United States.

Wollastonite is a calcium metasilicate ($CaSiO_3$) and usually found in crystalline limestone at the contact with intrusive igneous rocks. It is a white to gray mineral, having a hardness of $4\frac{1}{2}$ to 5 and a specific gravity of about 2.9.

CHAPTER SIX

SALINES

Bibliography: State Mineralogist Reports III, XIV, XV, XVII–XXIX (inc.). Bulletin 24. Spurr and Wormser, "Marketing of Minerals." "Non-Metallic Minerals," by R. B. Ladoo. See also under each substance.

Under this heading are included borax, common salt, soda, potash, and other alkaline salts. The first two have been produced in a number of localities in California, more or less regularly since the early sixties. Except for a single year's absence, soda has had a continuous production since 1894. Potash, magnesium chloride and sulphate, and calcium chloride have been added to the commercial list in recent years, joined in 1926 by bromide, and in 1931 by iodine. The nitrates are still prospective.

Our main resources of salines are the lake beds of the desert regions of Imperial, Inyo, Kern, Los Angeles, San Bernardino, and San Luis Obispo counties, and the waters of the Pacific Ocean.

The total value of this group showed an increase from $8,652,224 in 1933 to $10,413,019 in 1934. The following table gives details for the years 1933 and 1934:

Substance	1933		1934		Increase+ Decrease— Value
	Amount	Value	Amount	Value	
Borates	197,495 tons	$3,019,513	240,696 tons	$5,524,262	$2,504,749+
Iodine	*	*	355,279 lbs.	423,016	* —
Magnesium salts	2,073 tons	159,660	2,325 tons	194,642	34,982+
Salt	321,312 tons	1,251,024	332,194 tons	1,222,810	28,214—
Soda	70,598 tons	1,019,130	99,380 tons	1,219,561	200,431—
Unapportioned		[a]3,202,897		[b]1,828,728	1,374,169—
Total values		$8,652,224		$10,413,019	
Net increase					$1,760,795+

* Included under 'Unapportioned.'
[a] Includes bromine, calcium chloride, iodine and potash.
[b] Includes bromine, calcium chloride and potash.

BORATES

Bibliography: State Mineralogist Reports III, X, XII–XV (inc.), XVII–XXIX (inc.), XXV–XXVII (inc.). Bulletins 24, 67, 91.

During the year 1934 there was produced in California a total of 240,732 short tons of borate materials, compared with 191,950 tons for 1933. The material shipped during the year included the new sodium borates, kernite (rasorite), kramerite from Kern County; also crystallized borax prepared by evaporation of brines at Searles Lake in San Bernardino County and Owens Lake in Inyo County.

As the crude ore is not sold as such, but is almost entirely calcined before shipping to the refinery for conversion into the borax of commerce, and because of the fact that the material varied widely in boric

acid content, we have recalculated the tonnage to a basis of 40 per cent, A. B. A. This is approximately the average A. B. A. content of the colemanite material after calcining, and also of the crystallized borax obtained from evaporation of the lake brines.

Recalculated as above, the 1934 production totaled 240,696 short tons valued at $5,524,262. This was an increase in both quantity and value over the 1933 output, which was 197,495 tons worth $3,019,513.

The total amount of borates exported from the United States[1] during the year 1934 was 103,643 short tons valued at $2,997,276, as compared with 87,677 tons worth $2,498,035 in 1933.

Total Production of Borate Materials in California.

Borax was first discovered in California in the waters of Tuscan Springs in Tehama County, January 8, 1856. Borax Lake in Lake County was discovered in September of the same year by Dr. John A. Veach. This deposit was worked in 1864–1868, inclusive, and during that time produced 1,181,365 pounds of refined borax. The bulk of it was exported by sea, to New York. This was the first commercial output of this salt in the United States, and California is still today the leading American producer of borax, having been for many years the sole producer.

Production from the dry lake 'playa' deposits of Inyo and San Bernardino counties began in 1873; but it was not until 1887 that the borax industry was revolutionized by the discovery of the colemanite beds at Calico, in San Bernardino County, and later similar beds in Inyo and Los Angeles counties. The colemanite deposits of Ventura County were not worked extensively, owing to lack of transportation facilities. Some production of colemanite has been made from deposits opened up in Clarke County, Nevada. Colemanite was in turn, displaced by the discovery in 1926 of kernite (rasorite) a sodium borate, near Kramer in Kern County.

The total production of borate materials in California is shown in the following table:

[1] Monthly Summary of Foreign Commerce of the United States, Department of Commerce, Dec., 1934.

Total Production of Borate Materials in California

Year	Tons	Value	Year	Tons	Value
1864	12	$9,478	1901	22,221	$982,380
1865	126	94,099	1902	[1]17,202	2,234,994
1866	201	132,538	1903	34,430	661,400
1867	220	156,137	1904	45,647	698,810
1868	32	22,384	1905	46,334	1,019,158
1869			1906	58,173	1,182,410
1870			1907	53,413	1,200,913
1871			1908	22,200	1,117,000
1872	140	89,600	1909	16,628	1,163,960
1873	515	255,440	1910	16,828	1,177,960
1874	915	259,427	1911	50,945	1,456,672
1875	1,168	289,080	1912	42,135	1,122,713
1876	1,437	312,537	1913	58,051	1,491,530
1877	993	193,705	1914	62,500	1,483,500
1878	373	66,257	1915	67,004	1,663,521
1879	364	65,443	1916	103,523	2,409,375
1880	609	149,245	1917	109,944	2,561,958
1881	690	189,750	1918	88,772	1,867,908
1882	732	201,300	1919	66,791	1,717,192
1883	900	265,500	1920	127,065	2,794,206
1884	1,019	198,705	1921	50,136	1,096,326
1885	942	155,430	1922	[2]39,087	1,068,025
1886	1,285	173,475	1923	62,667	1,893,798
1887	1,015	116,689	1924	52,070	1,599,149
1888	1,405	196,636	1925	46,124	1,526,938
1889	965	145,473	1926	47,605	1,625,298
1890	3,201	480,152	1927	72,462	3,043,260
1891	4,267	640,000	1928	109,722	3,378,552
1892	5,525	838,787	1929	144,678	3,312,085
1893	3,955	593,292	1930	209,869	3,686,817
1894	5,770	807,807	1931	206,405	5,753,037
1895	5,959	595,900	1932	179,356	2,856,470
1896	6,754	675,400	1933	197,495	3,019,513
1897	8,000	1,080,000	1934	240,696	5,524,262
1898	8 300	1,153,000			
1899	20,357	1,139,882	Totals	2,882,161	$82,146,889
1900	25,837	1,013,251			

[1] Refined borax. [2] Recalculated to 40% 'anhydrous boric acid' equivalent beginning with 1922.

BROMINE

The first commercial production of bromine and bromine compounds was begun during 1926 by the California Chemical Corporation in its plant at Chula Vista, San Diego County, from salt works bittern waters. This same plant has been recovering magnesium chloride for a number of years. Bromine is also now being made at a similar bittern-water plant at Newark, Alameda County. The 1934 output was a marked increase over that of 1933, annual details of which are concealed under the 'Unapportioned' item to conceal the production of a single company which operated both plants.

The total commercial production of bromine in California is as follows:

Year	Tons	Value
1926 1927 1928 *	158	$120,480
1929 1930 1931 *	802	552,933
1932 1933 1934 *	559	146,547
Totals	1,519	$819,960

* Annual details concealed under 'Unapportioned.'

CALCIUM CHLORIDE

Bibliography: U. S. Geol. Surv., Min. Res. 1919, Pt. II. Engineering and Contracting, Roads and Streets, monthly issue, Feb. 6, 1924. 'How to Maintain Roads,' manual of instruction of Dow Chemical Company.

Calcium chloride is hydroscopic, that is, it has an affinity for water. This property is taken advantage of by utilizing this salt as a drying agent. During 1934 the production of calcium chloride in California came from two plants in San Bernardino County. The annual details are conceded under the 'Unapportioned' item to conceal the output of the operator.

Total Calcium Chloride Production in California.

Commercial production of calcium chloride in California was first reported to the State Mining Bureau in 1921, from two plants in San Bernardino County, being obtained as a by-product in the refining of salt from deposits in certain of the desert dry lakes. Total production in California is shown in the following tabulation:

Year	Tons	Value
1921	683	$22,980
1922 *		
1923	1,204	26,580
1924 *		
1925	10,988	328,876
1926 *		
1927	34,195	508,748
1928 *		
1929	12,020	114,080
1930 *		
1931	9,688	103,237
1932 *		
1933	3,103	15,500
1934	*	*
Totals	71,881	$1,120,001

* Annual details concealed under 'Unapportioned.'

IODINE

Bibliography: U. S. Bureau of Mines I. C. 6387.

During 1934, in California, there were three plants producing iodine, all in Los Angeles County, with a total output of 355,279 pounds, valued at $423,016. The 1934 production was a decrease in both amount and value from that of the previous year. The annual details for 1933 were concealed under the 'Unnapportioned' item.

Iodine was first produced in California during 1917 to 1921 as a by-product of potash which was reduced from kelp in an experimental station of U. S. Department of Agriculture at Summerland, but after the armistice the demand for these minerals decreased so that the plants in Santa Barbara County closed. In 1929 the General Salt Company erected a plant which reduces iodine from the waste waters of certain deep oil wells in the Long Beach field. During 1933 two more plants started operation, making a total of three producing plants in the state.

The total production of 1929, 1931 and 1933 combined, in California was 696,297 pounds of iodine worth $1,374,311.

MAGNESIUM SALTS

Bibliography: State Mineralogist Reports XX, XXI, XXV–XXVI (inc.). Bulletin 91. 'Dictionary of Applied Chemistry,' by Thorpe. U. S. Geol. Surv., Min. Res. of P. S.

During 1934 there was an output of magnesium salts in California coming from one plant in San Diego County and two in San Mateo County, amounting to 2,325 short tons valued at $194,642, and was the chloride and carbonate. The 1934 production was an increase over that of 1933, which amounted to 2,073 tons worth $159,660. The chloride was nearly all sold for use in magnesite stucco and cement mixtures (Sorel cement), also some for road liquor. The carbonate, a bulky white powder, was used as a heat-insulating material, as a filler for rubber, paper, paint, etc., and in medicines, in tooth paste, in face powder and as a polish for metal and glass. The sulphate marketed was utilized for medicinal and bath purposes. The material coming from San Diego County was residual bitterns from the salt plants and was in part marketed in the liquid form carrying from 35 per cent to 67 per cent $MgCl_2$ and in part as dry crystals, while that from San Mateo County was magnesium carbonate.

The average value reported for the chloride produced in California in 1934 was approximately $30 per ton, f.o.b. plant.

Total Production of Magnesium Salts in California.

Commercial production of magnesium chloride in California was begun in 1916 by some of the salt companies, from the residual bitterns obtained during the evaporation of sea water for its sodium chloride. In addition, some magnesium sulphate, or 'epsom salts' is also made, annually, but in smaller amount, and magnesium carbonate by a patented process, direct from sea water.

The total production of magnesium salts in California, since the beginning of the industry here, is shown in the following tabulation:

Year	Tons	Value
1916	851	$6,407
1917	1,064	34,973
1918	1,008	29,955
1919	1,616	82,457
1920	3,150	107,787
1921	4,153	106,140
1922	3,036	89,788
1923	3,662	116,031
1924	4,823	145,883
1925	4,221	132,553
1926	4,881	124,470
1927* 1928	6,241	139,589
1929* 1930	4,914	333,906
1931* 1932	2,749	217,979
1933	2,073	159,660
1934	2,325	194,642
Totals	50,767	$2,022,220

* Annual details concealed under 'Unapportioned.'

NITRATES

Bibliography: State Mineralogist Reports XV, XXV, XXVI, XXVII. Bulletins 24, 67, 91. U. S. G. S., Press Bulletin No. 373, July, 1918. Smithsonian Inst., Publ. No. 2421, 1916.

Nitrates of sodium, potassium and calcium have been found in various places in the desert regions of the State, but no deposit of commercial value has been developed as yet. It is hoped that a closer search may some day be rewarded by workable discoveries. At present the principal commercial source of nitrates is the Chilean saltpeter (sodium nitrate) deposits in South America.

The fixation of atmospheric nitrogen electrically has been accomplished successfully in Germany and Scandinavia. The possibilities of cheap hydroelectric power in California make the subject one of interest to us, as we have also the natural raw materials and chemicals to go with the power. Sodium and potassium cyanides can be made by fixation of atmospheric nitrogen electrically.

POTASH

Bibliography: State Mineralogist Reports XV, XVIII, XX, XXII, XXV, XXVII (inc.). Bulletins 24, 67, 91. U. S. G. S., Min. Res. 1913, 1914, 1915. Senate Doc. No. 190, 62 Congress, 2d Session. Mining & Sci. Press, Vol. 112, p. 155; Vol. 114, p. 789. Eng. & Min. Jour.-Press, Vol. 117, p. 557, Apr. 5, 1924.

The 1934 production of potash in California came from a single operator in San Bernardino County, the details of which are concealed under the 'Unapportioned' item. This was principally chloride and the product averaged 60% equivalent K_2O content. The material was sold mainly for fertilizer manufacture.

Imports of crude potash minerals and salts into the United States during 1934, according to the U. S. Bureau of Foreign and Domestic Commerce, amounted to 413,897 long tons valued at $8,840,784, compared with 406,015 long tons worth $9,238,099 in 1933. These materials consisted mainly of 'manure salts,' crude chloride (muriate) and sulphate, and kainite, all of which are admitted duty free.

Quotations have recently ranged from $35 per ton c.i.f. Atlantic and Gulf ports for high-grade sulphate (90%–95%), $20.00 per ton for muriate (80%–85%), and $12.50 for manure salts (30%).

Total Production of Potash in California.

Potash production began commercially in California in 1914, with a small yield from kelp. The bulk of the output comes from deposits of potash-bearing residues and brines in the old lake beds of the desert regions, particularly Searles Lake, San Bernardino County. A small amount has been made from salt-works bitterns, and for a time there was some from Portland cement dust. Some also has been obtained from molasses distillery-slops char.

The annual amounts and value of these potash materials, since their beginning in California in 1914, have been as follows:

Year	Tons	Value
1914	10	$460
1915	1076	19,391
1916	17,808	663,605
1917	129,022	4,202,889
1918	49,381	6,808,976
1919	28,118	2,415,963
1920	26,298	1,465,463
1921	14,806	390,210
1922	17,776	584,388
1923	29,597	709,836
1924	33,107	747,407
1925	36,355	829,770
1926	32,884	812,285
1927	67,340	1,952,852
1928}* 1929}	178,680	5,522,350
1930}* 1931}	172,263	5,500,536
1932}* 1933}	153,147	3,932,721
1934	*	*
Totals	987,768	$36,565,102

* Annual details concealed under 'Unapportioned.'

SALT

Bibliography: State Mineralogist Reports II, XII–XV (inc.), XVII–XXIII (inc.), XXV–XXVII. Bulletins 24, 67, 91. U. S. Geol. Survey, Bull. 669. U. S. Bur. of Mines, Bull. 146.

Most of the salt production in California is obtained by evaporation of water of the Pacific Ocean, plants being located on the shores of San Francisco, Monterey, and San Diego bays, and at Long Beach. Additional amounts are derived from lakes and lake beds in the desert regions (in part, rock salt), mainly in Imperial, Kern, and San Bernardino counties, and evaporation of alkaline lake water in Modoc County. A small amount of valuable medicinal salts has been obtained by evaporation of the water of Lake Mono, Mono County.

During the year 1934, in California there was an output of 332,194 short tons of salt valued at $1,222,810, compared with 321,312 tons worth $1,251,024 in 1933. There were twelve plants operating in 1934, with two each in Alameda and San Bernardino counties, and one each in Imperial, Kern, Los Angeles, Modoc, Mono, Monterey, San Diego, and San Mateo counties.

The average value reported for salt produced in California during 1934 was $3.68 per ton f.o.b plant, as compared with $3.89 in 1933, $3.58 in 1932, $3.73 in 1931, and $3.36 in 1930.

Production of Salt in California, by Years.

Amount and value of annual production of salt in California from 1887 is shown in the following tabulation:

Year	Tons	Value	Year	Tons	Value
1887	28,000	$112,000	1912	185,721	$383,370
1888	30,800	92,400	1913	204,407	462,681
1889	21,000	63,000	1914	223,806	583,553
1890	8,729	57,085	1915	169,028	368,737
1891	20,094	90,303	1916	186,148	455,695
1892	23,570	104,788	1917	227,825	584,373
1893	50,500	213,000	1918	212,076	806,328
1894	49,131	140,087	1919	233,994	896,963
1895	53,031	150,576	1920	230,638	972,648
1896	64,743	153,244	1921	197,989	832,702
1897	67,851	157,520	1922	223,238	819,187
1898	93,421	170,855	1923	275,979	1,130,670
1899	82,654	149,588	1924	318,800	1,159,137
1900	89,338	204,754	1925	284,068	949,826
1901	126,218	366,376	1926	311,761	1,124,978
1902	115,208	205,876	1927	263,028	639,127
1903	102,895	211,365	1928	340,580	1,024,656
1904	95,968	187,300	1929	392,039	2,665,436
1905	77,118	141,925	1930	347,945	1,167,487
1906	101,650	213,228	1931	330,951	1,233,567
1907	88,063	310,967	1932	256,353	918,480
1908	121,764	281,469	1933	321,312	1,251,024
1909	155,680	414,708	1934	332,194	1,222,810
1910	174,920	395,417			
1911	173,332	324,255	Totals	8,084,558	$26,565,521

SODA

Bibliography: State Mineralogist Reports XII, XIII, XV, XVII, XVIII, XXX, XXII, XXIII, XXV–XXIX (inc.). Bulletins 24, 67, 91. U. S. Geol. Surv., Bull. 717.

The production of sodium salts in California in 1934 included: Soda ash, trona, caustic soda and bicarbonate from plants at Owens Lake, Inyo County, and soda ash, salt cake and trona ('sesqui-carbonate,' a double salt of Na_2CO_3 and $NaHCO_3$) from Searles Lake, San Bernardino County. There were no shipments of salt cake (sulphate) from the Carrizo Plains, San Luis Obispo County. The output of the year amounted to 99,380 short tons valued at $1,219,561, as compared with the 1933 figures, which were 58,017 tons and $1,019,130.

The dense ash and bicarbonate were used mainly in the manufacture of soap, glass, paper, oil refining, sugar refining, and chemicals; and the trona for metallurgical purposes.

Soda Production of California, by Years.

The total output, showing amount and value of these materials in California since the inception of the statistical records of the State Mining Bureau, is given in the table which follows:

Year	Tons	Value	Year	Tons	Value
1894	1,530	$20,000	1916	10,593	$264,825
1895	1,900	47,500	1917	24,505	928,578
1896	3,000	65,000	1918	20,447	855,423
1897	5,000	110,000	1919	21,294	721,958
1898	7,000	154,000	1920	32,407	1,164,898
1899	10,000	250,000	1921	14,828	438,996
1900	1,000	50,000	1922	20,084	573,661
1901	8,000	400,000	1923	34,885	764,284
1902	7,000	50,000	1924	32,536	711,796
1903	18,000	27,000	1925	48,625	947,649
1904	12,000	18,000	1926	63,333	1,305,802
1905	15,000	22,500	1927	62,571	1,478,239
1906	12,000	18,000	1928	80,838	1,469,297
1907			1929	90,646	1,838,657
1908	9,600	14,400	1930	90,122	1,627,344
1909	7,712	11,593	1931	78,701	1,217,811
1910	8,125	11,862	1932	58,017	826,369
1911	9,023	52,887	1933	70,598	1,019,130
1912	7,200	37,094	1934	99,380	1,219,561
1913	1,861	24,936			
1914	6,522	115,396	Totals	1,211,682	$20,957,931
1915	5,799	83,485			

CHAPTER SEVEN

BY COUNTIES

Introductory.

The State of California includes a total area of 158,297 square miles, of which 155,652 square miles are of land. The maximum width is 235 miles, the minimum 148 miles, and the length from the northwest corner to the southeast corner is 775 miles. The State is divided into fifty-eight counties. The 1930 census figures show a total population for California of 5,672,009. Minerals of commercial value exist in every county, and during 1934 some active production was reported to the State Division of Mines from all of the fifty-eight.

Rank of Counties in Mineral Yield, 1934.

Of the ten leading counties in point of total value of output for 1934, the first five, viz., Los Angeles, Kern, Kings, Orange and Ventura, also Santa Barbara (seventh) and Fresno (ninth) owe their position to petroleum and natural gas. Los Angeles, due to crude oil, leads all other counties. In 1934 it was credited with 28% of the State's total value, having passed Kern in 1923, which led the State for many years. San Bernardino (sixth) owes its position to cement, borates, and potash; Nevada (eighth), and Sacramento (tenth) to gold.

There were twenty-three counties each having a mineral production in excess of a million dollars during 1934. Petroleum was an important item in seven; gold in eight; natural gas in six; cement in five; borates and miscellaneous stone in two each; and potash in one. In point of variety and diversion, San Bernardino County led all others in 1934, with a total of twenty-five different products on the commercial list, followed by Kern with nineteen; Inyo with seventeen; Los Angeles with sixteen;; Fresno and San Diego with fifteen each; Riverside with fourteen; Monterey with thirteen; Butte, El Dorado, Placer, San Luis Obispo, and Tulare with eleven each; and Alameda, Amador, Imperial, Mono, Sacramento, Santa Cruz, and Ventura with ten each.

	County	*Value*
1.	Los Angeles	$66,359,227
2.	Kern	37,053,187
3.	Kings	28,067,389
4.	Orange	25,746,031
5.	Ventura	13,688,749
6.	San Bernardino	10,537,050
7.	Santa Barbara	7,570,191
8.	Nevada	7,488,996
9.	Fresno	5,772,807
10.	Sacramento	3,877,757
11.	Riverside	2,590,545
12.	Amador	2,400,161
13.	Alameda	2,379,633
14.	Calaveras	2,196,592
15.	Yuba	1,951,046
16.	Santa Cruz	1,796,844
17.	El Dorado	1,738,576
18.	Contra Costa	1,734,999
19.	San Mateo	1,562,490
20.	Inyo	1,293,725
21.	Shasta	1,145,180
22.	Merced	1,050,492
23.	Sierra	1,046,307
24.	Mariposa	807,908
25.	Placer	678,232
26.	Trinity	650,620
27.	Siskiyou	648,166
28.	Butte	637,962
29.	San Diego	487,266
30.	Tuolumne	423,588
31.	Stanislaus	418,172
32.	Napa	398,214
33.	Santa Clara	386,445
34.	San Benito	266,857
35.	Madera	264,142
36.	Lake	260,481
37.	Mono	212,438
38.	Monterey	190,902
39.	Tulare	184,474
40.	Marin	183,354
41.	Plumas	181,143
42.	Sonoma	162,005
43.	San Joaquin	148,097
44.	San Luis Obispo	138,453
45.	Imperial	108,480
46.	Del Norte	81,998
47.	Humboldt	81,432
48.	Colusa	45,875
49.	Modoc	48,117
50.	Tehama	39,575
51.	Yolo	38,027
52.	Glenn	30,608
53.	San Francisco	28,641
54.	Lassen	28,318
55.	Alpine	25,431
56.	Solano	23,641
57.	Mendocino	14,351
58.	Sutter	3,322
	Total	$237,374,709

ALAMEDA

Land area: 732 square miles.
Population: 475,153 (1930 census).
Location: East side of San Francisco Bay.
County seat: Oakland.
References: State Mineralogist Report XVII: XVIII: XX: XXVI (Oct. 1929).

Alameda County, while in no sense one of the 'mining counties,' came thirteenth on the list of counties as to value, with a mineral production for 1934 worth $2,379,633, and having ten different substances. This was an increase over the 1933 output, which was valued at $1,930,111.

Commercial production for 1934 was as follows:

Substance	*Value*
Brick and hollow building tile	$192,527
Stone, miscellaneous	1,090,371
Other minerals*	1,096,735
Total value	$2,379,633

* Includes clay (pottery), bromine, lime, limestone (shells), pyrite, salt.

ALPINE

Land area: 776 square miles.
Population: 236 (1930 census).
Location: On eastern border of State, south of Lake Tahoe.
County seat: Markleeville.
References: State Mineralogist Report XV:XVII:XVIII:XXVII (Oct., 1931).

Alpine County ranked fifty-fifth in value of output for 1934, which was $25,431, compared with $12,724 in 1933.

Commercial production for 1934 was as follows:

Substance	*Amount*	*Value*
Copper	448 lbs.	$36
Gold	------	3,726
Lead	1,564 lbs.	58
Silver	3,668 fine ozs.	2,371
Stone, miscellaneous	------	10,384
Unapportioned	------	8,856
Total value		$26,431

AMADOR

Land area: 601 square miles.
Population: 8494 (1930 census).
Location: East-central part of State—Mother Lode District.
County seat: Jackson.
References: State Mineralogist Report XIV: XVII: XVIII: XIX: XX: XXIII (April, 1927): XXX.

Amador County ranked twelfth as to value of mineral output for 1934, with ten different substances worth $2,400,161, compared with $2,028,598 in 1933.

Amador at one time led the State in gold production, though exceeded in 1920–1923 and in 1926–1927 by Yuba and Nevada counties, but in 1925 and 1928 by Yuba only, in 1929–1930 by Nevada only, and in 1931–1934 by Nevada and Sacramento.

Commercial production for 1934 was as follows:

Substance	*Amount*	*Value*
Clay (pottery)	28,620 tons	$50,833
Copper	7,254 lbs.	580
Gold	------	2,274,275
Lead	6,012 lbs.	223
Silver	16,311 fine ozs.	10,544
Stone, miscellaneous	------	12,115
Other minerals*	------	51,591
Total value		$2,400,161

* Includes brick, coal, gems (diamond).

BUTTE

Land area: 1722 square miles.
Population: 34,010 (1930 census).
Location: North-central portion of state.
County seat: Oroville.
References: State Mineralogist Report XV: XVII: XVIII: XXIV (July, 1928): XXVI (Oct., 1930).

Butte County ranks twenty-eighth in California in regard to value of mineral output in 1934, with eleven different substances having a total value of $637,962, as compared with $404,661 in 1933.

Commercial production for 1934 was as follows:

Substance	*Amount*	*Value*
Copper	1,805 lbs.	$144
Gold	------	544,000
Silver	4,907 fine ozs.	3,172
Stone, miscellaneous	------	80,971
Other minerals*	------	9,675
Total value		$637,962

* Includes brick, lead, gems (diamonds), mineral water, natural gas, soapstone.

CALAVERAS

Land area: 1027 square miles.
Population: 6009 (1930 census).
Location: East-central portion of state—Mother Lode District.
County seat: San Andreas.
References: State Mineralogist Report XIV: XVII: XVIII: XIX: XX: XXI (April, 1925).

Calaveras County ranks fourteenth in California in regard to value of mineral output in 1934 with a total of $2,196,592, as compared with the 1933 figures of $938,981. The increase was due to gold.

Commercial production for 1934 was as follows:

Substance	*Amount*	*Value*
Gold	------	$1,274,862
Lead	612 lbs.	23
Silver	10,661 fine ozs.	7,021
Miscellaneous stone	------	48,239
Other minerals*	------	866,447
Total value		$2,196,592

* Includes cement, clay (pottery), copper, mineral water.

COLUSA

Land area: 1140 square miles.
Population: 10,257 (1930 census).
Location: Sacramento Valley.
County seat: Colusa.
References: State Mineralogist Report XIV: XVII: XVIII: XXV (April, 1929).

Colusa County ranked forty-ninth in regard to the value of mineral output in 1934 with six different mineral substances worth a total of $45,875, as compared with $8,896 in 1933.

Commercial production for 1934 was as follows:

Substance	*Amount*	*Value*
Gold	----	$477
Silver	5 fine ozs.	3
Stone, miscellaneous	----	34,625
Other minerals*	----	10,770
Total value		$45,875

* Includes mineral water, quicksilver, petroleum.

CONTRA COSTA

Land area: 714 square miles.
Population: 78,554 (1930 census).
Location: East side of San Francisco Bay.
County seat: Martinez.
References: State Mineralogist Report XVII : XVIII : XXIII (Jan., 1927).

Contra Costa County stands eighteenth on the list in respect to value of mineral output for 1934, with eight different substances worth $1,734,999, as compared with $1,231,971 in 1933.

Commercial production for 1934 was as follows:

Substance	*Value*
Stone, miscellaneous	$408,412
Other minerals*	1,326,587
Total value	$1,734,999

* Includes brick and hollow building tile, cement, pottery clay, mineral water, sandstone, silica (glass sand).

DEL NORTE

Land area: 1024 square miles.
Population: 4734 (1930 census).
Location: Extreme northwest corner of state.
References: State Mineralogist Report XIV: XVII: XXI (July, 1925) : XXIX (Jan.-April, 1933).

Del Norte County was in forty-sixth place as a mineral producing county for 1934, with five different substances worth $81,998, as compared with $3,062 in 1933.

Commercial production for 1934 was as follows:

Substance	*Amount*	*Value*
Gold	------	$8,078
Silver	20 fine ozs.	13
Stone, miscellaneous	------	73,883
Other minerals	------	24
Total value		$81,998

EL DORADO

Land area: 1753 square miles.
Population: 8303 (1930 census).
Location: East-central portion of the state, northernmost of the Mother Lode counties.
County seat: Placerville.
References: State Mineralogist Report XV: XVII: XVIII: XIX: XX: XXII (Oct., 1926).

El Dorado County, which contains the location where gold in California was first heralded to the world, comes seventeenth on the list

of counties ranked according to value for 1934, with eleven different mineral substances worth $1,738,576. In addition to the segregated figures here given, a large tonnage of limestone is annually shipped for use in cement manufacture, the value being included in the state's total for cement. The 1933 output was valued at $920,747. Gold accounts for the increased value.

Commercial production for 1934 was as follows:

Substance	*Amount*	*Value*
Copper	4,312 lbs.	$345
Gold	------	1,380,710
Lime	8,250 tons	85,938
Limestone	112,237 tons	239,743
Silver	9,335 fine ozs.	6,035
Stone, miscellaneous	------	7,400
Other minerals*	------	18,405
Total value		$1,738,576

* Includes lead, silica (quartz), slate, soapstone.

FRESNO

Land area: 5950 square miles.
Population: 144,369 (1930 census).
Location: South-central portion of state.
County seat: Fresno.
References: State Mineralogist Report XIV : XVII : XVIII : XXV (July, 1929).

Fresno County, ninth in importance as a mineral producer among the counties of California, reports an output for 1934 of fifteen different mineral substances, with a total value of $5,772,807, as compared with the 1933 value of $3,901,103.

Commercial production for 1934 was as follows:

Substance	*Amount*	*Value*
Gold	------	$24,066
Natural gas	1,968,080 M cu. ft.	1,235,707
Petroleum	6,607,661 bbls.	4,295,980
Quicksilver	130 flasks	1,208
Silver	135 fine ozs.	87
Other minerals*	------	215,759
Total value		$5,772,807

* Includes brick and hollow building tile, clay (pottery), copper, diatomite, gems (topaz), granite, gypsum, limestone, miscellaneous stone.

GLENN

Land area: 1259 square miles.
Population: 10,935 (1930 census).
Location: West side of Sacramento Valley.
County seat: Willows.
References: State Mineralogist Report XIV : XVII : XVIII.

Glenn County stands fifty-second as a mineral producing county of the State for 1934 and owes its position mainly to the presence of large deposits of sand and gravel, much of which is used as railroad ballast.

Commercial production for 1934 was as follows, being an increase over $11,690, the output for the previous year:

Substance	*Value*
Stone, miscellaneous	$30,608

HUMBOLDT

Land area: 3634 square miles.
Population: 43,189 (1930 census).
Location: Northwestern portion of state, bordering on Pacific Ocean.
County seat: Eureka.
References: State Mineralogist Report XIV: XVII: XVIII: XXI (July, 1925).

Humboldt County ranked forty-seventh in the value of its mineral output among the counties of the State for 1934, with seven different mineral substances valued at $81,432, compared with the 1933 output worth $71,051.

Commercial production for 1934 was as follows:

Substance	*Amount*	*Value*
Gold	------	$28,978
Silver	124 fine ozs.	80
Stone, miscellaneous	------	50,371
Other minerals*	------	2,003
Total value		$81,432

* Includes brick, pottery clay, natural gas.

IMPERIAL

Land area: 4089 square miles.
Population: 60,894 (1930 census).
Location: Extreme southeast corner of the state.
County seat: El Centro.
References: State Mineralogist Report XIV: XVII: XVIII: XIX: XX: XXII (April, 1926).

Imperial County ranked forty-fifth in total value of mineral output for 1934, with ten different mineral substances worth $108,480, compared with $166,858 for 1933.

Commercial production for 1934 was as follows:

Substance	*Amount*	*Value*
Gold	------	$9,973
Silver	110 fine ozs.	71
Stone, miscellaneous	------	48,066
Other minerals*	------	50,370
Total value		$108,480

* Includes carbon dioxide, copper, gypsum, pumice, salt, cyanite.

INYO

Land area: 10,019 square miles.
Population: 6557 (1930 census).
Location: Lies on eastern border of state, north of San Bernardino County.
County seat: Independence.
References: State Mineralogist Report XV: XVII: XVIII: XX: XXII (Oct., 1926): XXVII, XXX.

Inyo County's mineral output for 1934 reached a total value of $1,293,725, having seventeen different mineral substances and standing

twentieth among the counties of the State as to value of production. The 1933 yield was worth $1,014,913.

Commercial production for 1934 was as follows:

Substance	*Amount*		*Value*
Copper	33,363	lbs.	$2,669
Gold	------		266,109
Lead	530,037	lbs.	19,611
Pumice and volcanic ash	637	tons	5,115
Silver	40,130	fine ozs.	25,943
Stone, miscellaneous	------		66,081
Zinc	721,719	lbs.	31,034
Other minerals*	------		877,163
Total value			$1,293,725

* Includes bentonite, borates, dolomite, gems (beryl), slate, soda, sulphur, talc.

KERN

Land area: 8003 square miles.
Population: 82,219 (1930 census).
Location: South-central portion of state.
County seat: Bakersfield.
References: State Mineralogist Report XIV: XVII: XVIII: XIX:XX:XXV (Jan., 1929): XXIX (July-Oct., 1933): XXX.

Kern County, because of its immensely productive oil fields, for many years stood preeminent among all counties of California in the value of its mineral output. It was surpassed by Los Angeles and Orange counties in 1923, but by Los Angeles only in 1924–1934, for which petroleum is responsible. The 1934 production consisted of nineteen different mineral substances valued at $37,053,187, compared with the 1933 output worth $27,877,930.

Commercial production for 1934 was as follows:

Substance	*Amount*		*Value*
Clay (oil-well drilling-mud and pottery)	19,526	tons	$30,142
Copper	5,502	lbs.	440
Gold	------		1,021,849
Lead	11,008	lbs.	407
Natural gas	21,309,723	M cu. ft.	1,017,661
Petroleum	41,823,494	bbls.	30,475,225
Silver	113,646	fine ozs.	73,468
Stone, miscellaneous	------		131,743
Other minerals*	------		4,302,252
Total value			$37,053,187

* Includes bentonite, borates, brick, cement, gems, volcanic ash, quicksilver, salt, tungsten ore, wollastonite.

KINGS

Land area: 1559 square miles.
Population: 25,277 (1930 census).
Location: South-central portion of the state.
County seat: Hanford.
References: State Mineralogist Report XIV: XVII: XVIII: XXVI (Oct., 1930).

Kings County advanced from ninth position in 1929 to seventh in value of mineral production for 1930, and third for 1931–1933, accounted for by the bringing in of further oil wells at Kettleman Hills, which began commercial yield in 1928.

With six mineral substances commercial production for 1934 was as follows, compared with a total value of $25,474,252 for 1933:

Substance	Amount		Value
Gold	------		$694
Natural gas	96,939,145	M cu. ft.	4,957,070
Petroleum	21,393,483	bbls.	23,104,962
Silver	4	fine ozs.	3
Stone, miscellaneous	------		2,560
Unapportioned	------		2,100
Total value			$28,067,389

LAKE

Land area: 1278 square miles.
Population: 7166 (1930 census).
Location: About fifty miles north of San Francisco Bay and the same distance inland from the Pacific Ocean.
County seat: Lakeport.
References: State Mineralogist Report XIV: XVII: XVIII: XX: XXV (July, 1929).

Lake County was in thirty-sixth place as to the value of mineral output for 1934, with five different mineral substances worth $260,481 compared with $134,851 for 1933.

Commercial production for 1934 was as follows:

Substance	Amount		Value
Mineral water	11,372	gals.	$11,005
Quicksilver	3,497	flasks	221,837
Stone, miscellaneous	------		27,426
Other minerals *	------		213
Total value			$260,481

* Includes manganese ore and natural gas.

LASSEN

Land area: 4531 square miles.
Population: 12,587 (1930 census).
Location: Northeast portion of state.
County seat: Susanville.
References: State Mineralogist Report XV: XVII: XVIII: XIX: XXV (Jan., 1929): XXX.

Lassen County was in fifty-fourth place as a mineral producer for 1934, output was as follows, being a decrease from $45,739, which was the value for the previous year:

Substance	Amount		Value
Copper	304	lbs.	$24
Gold	------		14,689
Silver	430	fine ozs.	278
Unapportioned	------		13,327
Total value			$28,318

LOS ANGELES

Land area: 4067 square miles.
Population: 2,201,526 (1930 census).
Location: One of the southwestern coast counties.
County seat: Los Angeles.
References: State Mineralogist Report XV: XVII: XVIII: XIX: XX: XXIII (July, 1927): XXX.

The mineral production for Los Angeles County for the year 1934

amounted in value to $66,359,227, as compared with the 1933 output worth $68,785,294. This accounted for 28% of the entire State's total for 1934 and ranked Los Angeles first in the State as a mineral producer, exceeding Kern County, which was the leader for several years in the past.

Commercial production for 1934, consisting of sixteen substances, was as follows:

Substance	*Amount*		*Value*
Brick	30,739	M	$685,611
Hollow building tile	3,478	tons	24,960
Clay (pottery)	13,763	tons	7,772
Copper	517	lbs.	41
Gold	------		57,924
Iodine	355,279	lbs.	423,016
Lead	4,008	lbs.	148
Mineral water	8,202,017	gals.	479,710
Natural gas	58,220,382	M cu. ft.	3,421,320
Petroleum	60,297,000	bbls.	59,711,578
Sandstone	------		8,250
Silver	827	fine ozs.	535
Stone, miscellaneous	------		1,220,639
Other minerals *	------		317,723
Total value			$66,359,227

* Includes diatomite and salt.

MADERA

Land area: 2112 square miles.
Population: 17,152 (1930 census).
Location: East-central portion of state.
County seat: Madera.
References: State Mineralogist Report XIV : XVII : XVIII : XXIV (Oct., 1928) : XXX.

Madera County was in thirty-fifth place, as a mineral producer, for 1934 with an output of six different substances valued at $264,142, compared with $133,105 for 1933.

Commercial production for 1934 was as follows:

Substance	*Amount*		*Value*
Gold	------		$13,163
Silver	107	fine ozs.	69
Stone, miscellaneous	------		53,590
Other minerals *	------		197,320
Total value			$264,142

* Includes granite and volcanic ash.

MARIN

Land area: 529 square miles.
Population: 41,635 (1930 census).
Location: Adjoins San Francisco on the north.
County seat: San Rafael.
References: State Mineralogist Report XIV : XVII : XVIII : XXII (July, 1926) : XXIX.

Marin County, in fortieth place as to the value of mineral output for 1934, with four different mineral substances, had a commercial production which was as follows:

Substance	*Value*
Stone, miscellaneous	$136,127
Other minerals *	47,227
Total value	$183,354

* Includes brick and mineral water.

MARIPOSA

Land area: 1453 square miles.
Population: 2530 (1930 census).
Location: Most southerly of the Mother Lode counties. East-central portion of State.
County seat: Mariposa.
References: State Mineralogist Report XIV: XVII: XVIII: XIV (April, 1928).

Mariposa County is one of the distinctly "mining" counties of the State, although it stands but twenty-fourth on the list of counties in regard to the value of its mineral output for 1934 with a total of $807,908, as compared with $575,118 for 1933. Mariposa County is also the source of a large tonnage of limestone, annually, which is otherwise credited to cement manufacture in Merced County.

Commercial production for 1934 was as follows:

Substance	*Amount*	*Value*
Copper	1,771 lbs.	$142
Gold	------	517,443
Silver	4,971 fine ozs.	3,214
Stone, miscellaneous	----------	185,960
Other minerals *	------	101,149
Total value		$807,908

* Includes barite, granite, lead.

MENDOCINO

Land area: 3453 square miles.
Population: 23,491 (1930 census).
Location: Joins Humboldt County on the south and bounded by the Pacific Ocean on the west.
County seat: Ukiah.
References: State Mineralogist Report XIV: XVII: XVIII: XIX: XX.

Mendocino County's mineral output for 1934 was valued at $14,351, which ranked it fifty-seventh among the counties of the State as a mineral producer, compared with $35,283 for 1933. Commercial production for 1934 was as follows:

Substance	*Value*
Stone, miscellaneous	$14,301
Unapportioned	50
Total value	$14,351

MERCED

Land area: 1995 square miles.
Population: 36,900 (1930 census).
Location: About the geographical center of the state.
County seat: Merced.
References: State Mineralogist Report XIV: XVII: XVIII: XXI (April, 1925).

Merced County ranks twenty-second as to the value of mineral output for 1934, with seven different substances worth $1,050,492, compared with $766,014 for 1933.

Commercial production for 1934 was as follows:

Substance	*Amount*	*Value*
Gold	------	$598,695
Silver	1,625 fine ozs.	1,051
Stone, miscellaneous	------	38,643
Other minerals *	------	412,103
Total value		$1,050,492

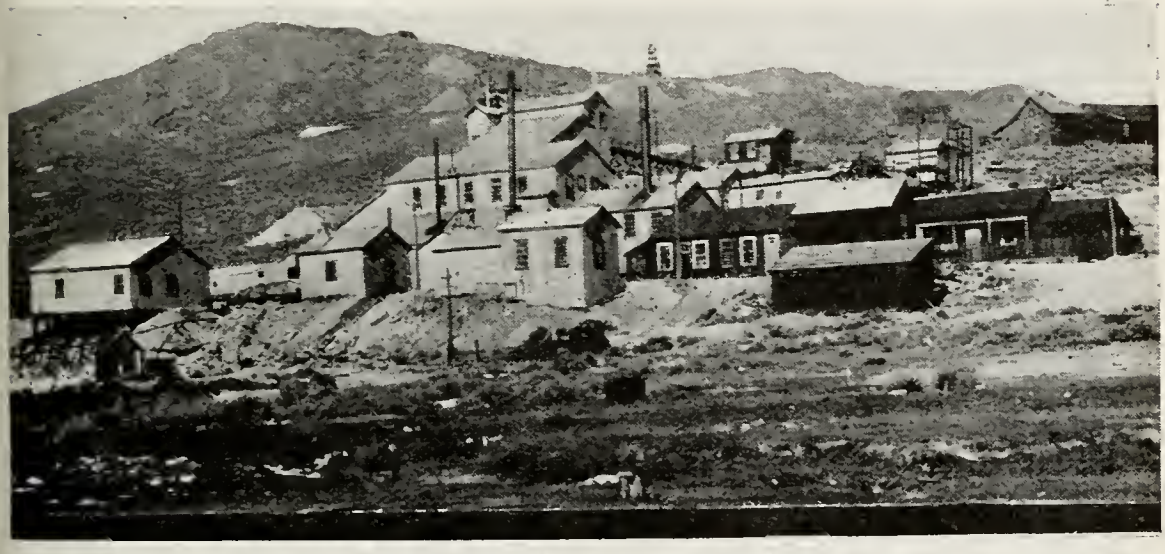
* Includes cement, gypsum, platinum.

MODOC

Land area: 3823 square miles.
Population: 8038 (1930 census).
Location: The extreme northeast corner of the state.
County seat: Alturas.
References: State Mineralogist Report XV: XVII: XVIII: XXV (Jan., 1929): XXX.

Modoc County, in forty-eighth place, with six different mineral substances, reported a commercial production as follows:

Substance	*Amount*	*Value*
Gold	------	$6,323
Silver	103 fine ozs.	67
Stone, miscellaneous	------	41,150
Other minerals	------	577
Total value		$48,117



Standard Consolidated Mill at Bodie, Mono County.

Cut by courtesy of Engineering and Mining Journal.

MONO

Land area: 3030 square miles.
Population: 1359 (1930 census).
Location: Is bordered by the state of Nevada on the east and is about in the central portion of the state measured on a north and south line.
County seat: Bridgeport.
References: State Mineralogist Report XV: XVII: XVIII: XX: XXIII (Oct., 1927): XXX.

Mono County, in thirty-seventh place with ten different mineral substances, reported a commercial production for 1934 as follows:

Substance	*Amount*	*Value*
Copper	510 lbs.	$41
Gold	------	56,092
Lead	7,487 lbs.	277
Silver	31,255 fine ozs.	20,205
Stone, miscellaneous	------	77,806
Other minerals *	------	58,017
Total value		$212,438

* Includes gems, molybdenum ore, pumice, salt, andalusite.

MONTEREY

Land area: 3330 square miles.
Population: 53,668 (1930 census).
Location: West-central portion of state, bordering on Pacific Ocean.
County seat: Salinas.
References: State Mineralogist Report XV: XVII: XVIII: XIX: XXI (Jan., 1925).

Monterey County produced thirteen different mineral substances during 1934, having a total value of $190,902, as compared with $114,040 for 1933.

In thirty-eighth place, commercial production for 1934 was as follows:

Substance	*Amount*	*Value*
Gold	------	$517
Silver	1 fine oz.	1
Stone, miscellaneous	------	101,652
Other minerals *	------	88,732
Total value		$190,902

* Includes clay (pottery), coal, diatomite, dolomite, natural gas, quicksilver, salt, sandstone, silica (glass sand).

NAPA

Land area: 783 square miles.
Population: 22,832 (1930 census).
Location: Directly north of San Francisco Bay—one of the 'bay counties.'
County seat: Napa.
References: State Mineralogist Report XIV: XVII: XVIII:XX: XXV (April, 1929).

In 1934 the value of Napa County's mineral output was $398.214, placing it in thirty-second place in the list of counties, as compared with $209,542 for 1933.

With eight different mineral substances, commercial production for 1934 was as follows:

Substance	*Amount*	*Value*
Mineral water	47,900 gal.	$13,900
Quicksilver	1,706 flasks	120,372
Stone, miscellaneous	------	256,982
Other minerals *	------	6,960
Total value		$398,214

* Includes asbestos, pumice, paving blocks, sandstone.

NEVADA

Land area: 974 square miles.
Population: 10,589 (1930 census).

Location: North of Lake Tahoe, on the eastern border of the state.
County seat: Nevada City.
References: State Mineralogist Report XVI: XVII: XVIII: XIX: XX: XXVI (April, 1930).

Nevada, one of the mountain counties of California, for some years alternated with Amador in the gold lead, but both were passed by Yuba in 1918–1921, also 1923. In 1922, 1924, 1929 to 1934, Nevada led all counties in gold output, but it held third place in 1925 and 1928, and second place in 1926 and 1927. Nevada County stands ninth on the list of counties in regard to value of its mineral output for 1934, with seven different mineral substances worth $7,488,996, as compared with $4,767,391 for 1933. The increase was due mainly to gold and silver.

Commercial production for 1934 was as follows:

Substance	*Amount*	*Value*
Copper	113,771 lbs.	$9,102
Gold	------	7,118,551
Lead	130,301 lbs.	4,821
Silver	314,509 fine ozs.	203,190
Stone, miscellaneous	------	151,032
Unapportioned	------	2,300
Total value		$7,488,996

ORANGE

Land area: 795 square miles.
Population: 118,611 (1930 census).
Location: Southwestern portion of state, bordering Pacific Ocean.
County seat: Santa Ana.
References: State Mineralogist Report XV: XVII: XVIII: XIX: XX: XXI (Jan., 1925).

Orange County, in fourth place as to the value of mineral output for 1934, produced nine mineral substances, worth $25,746,031, as compared with $19,263,581 for 1933.

Commercial production for 1934 was as follows:

Substance	*Amount*	*Value*
Clay (pottery)	12,740 tons	$31,328
Gold	------	572
Natural gas	21,256,008 M cu. ft.	1,366,560
Petroleum	25,891,732 bbls.	24,258,123
Silver	2 fine ozs.	1
Stone, miscellaneous	------	78,986
Other minerals *	------	10,461
Total value		$25,746,031

* Includes brick and mineral water.

PLACER

Land area: 1395 square miles.
Population: 24,442 (1930 census).
Location: Eastern border of state directly west of Lake Tahoe.
County seat: Auburn.
References: State Mineralogist Report XV: XVII: XVIII: XIX: XX: XXIII (July, 1927).

Placer County in twenty-fifth place, with eleven different mineral substances had a commercial production for 1934 as follows, compared with $293,866 for the previous year:

Substance	*Amount*	*Value*
Clay (pottery)	38,975 tons	$60,555
Copper	1,953 lbs.	156
Gold	------	547,892
Silver	10,808 fine ozs.	6,987
Stone, miscellaneous	------	33,413
Other minerals *	------	29,229
Total value		$678,232

* Includes brick, granite, lead, mineral water, chromite.

PLUMAS

Land area: 2594 square miles.
Population: 7909 (1930 census).
Location: Northeastern border of state, south of Lassen County.
County seat: Quincy.
References: State Mineralogist Report XVI: XVII: XVIII: XIX: XX:XXIV (Oct., 1928): XXIX: XXX

Plumas County's mineral output for 1934 with seven different mineral substances was valued at $181,143, as compared with $131,150 for 1933.

In forty-first place, commercial production for 1934 was as follows:

Substance	*Amount*	*Value*
Copper	773 lbs.	$59
Gold	------	153,056
Lead	2,960 lbs.	110
Silver	1,111 fine ozs.	718
Other minerals *	------	27,200
Total value		$181,143

* Includes barites, granite, miscellaneous stone.

RIVERSIDE

Land area: 7240 square miles.
Population: 82,078 (1930 census).
Location: Southern portion of state.
County seat: Riverside.
References: State Mineralogist Report XV: XVII: XVIII: XX: XXV (Oct., 1929): XXX.

Riverside is the fourth county in the state in size and the eleventh in regard to the total value of mineral output for 1934. Within its borders are included mountain, desert, and agricultural land. In point of variety Riverside County showed fourteen different mineral substances commercially produced in 1934 with a total value of $2,590,545. The increase in the 1934 output over that of 1933, which was valued at $2,218,738, was due mainly to cement.

Commercial production for 1934 was as follows:

Substance	*Amount*	*Value*
Clay (pottery)	16,081 tons	$35,101
Copper	1,606 lbs.	128
Gold	------	41,899
Lead	1,207 lbs.	45
Silver	664 fine ozs.	429
Stone, miscellaneous	------	136,032
Other minerals*	------	2,376,911
Total value		$2,590,545

* Includes brick and hollow building tile, cement, gems (Iceland spar), gypsum, mineral water, silica (glass sand), manganese ore.

SACRAMENTO

Land area: 983 square miles.
Population: 141,915 (1930 census).
Location: North-central portion of State.
County seat: Sacramento.
References: State Mineralogist Report XV: XVII: XVIII: XX: XXI (Jan., 1925).

Sacramento stands tenth among the counties of the State as a mineral producer, the output, principally gold, for 1934 being valued at $3,877,757, as compared with the 1933 production worth $3,172,763 In regard to gold output alone, this county ranks second, being exceeded only by Nevada, the Sacramento product coming from the dredges. With ten mineral substances, commercial production for 1934 was as follows:

Substance	*Amount*	*Value*
Brick and hollow building tile	------	$40,572
Gold	------	3,555,468
Silver	4,548 fine ozs.	2,940
Stone, miscellaneous	------	233,294
Other minerals *	------	45,483
Total value		$3,877,757

* Includes copper, lead, granite, natural gas, platinum, paving blocks.

SAN BENITO

Land area: 1392 square miles.
Population: 11,310 (1930 census).
Location: West-central portion of state.
County seat: Hollister.
References: State Mineralogist Report XV: XVII: XVIII: XX: XXII (April, 1926).

San Benito County ranks thirty-fourth among the counties in regard to the value of total mineral production for 1934, having an output worth $266,857, as compared with $247,479 for the previous year.

Commercial production for 1934 was as follows:

Substance	*Amount*	*Value*
Quicksilver	746 flasks	$52,699
Other minerals *	------	214,158
Total value		$266,857

* Includes bentonite and miscellaneous stone.

SAN BERNARDINO

Land area: 20,157 square miles.
Population: 133,827 (1930 census).
Location: Southeastern portion of state.
County seat: San Bernardino.
References: State Mineralogist Report XV: XVII: XVIII: XIX: XXVI (July, 1930): XXVII (July, 1931): XXX.

San Bernardino, by far the largest county in the State in area, ranks sixth as regards to the value of mineral output for 1934 with a total of $10,537,050, as compared with the 1933 total of $8,975,485.

San Bernardino for several years (except 1918) has led all other counties in the State in point of variety of minerals, producing commercially during 1934 a total of 25 different substances.

Commercial production for 1934 was as follows:

Substance	*Amount*	*Value*
Clay (pottery)	1,185 tons	$7,844
Copper	25,606 lbs.	2,048
Gold	------	301,994
Lead	103,497 lbs.	3,829
Lime	3,996 tons	30,846
Limestone	11,210 tons	29,749
Silver	228,314 fine ozs.	147,597
Stone, miscellaneous	------	165,057
Other minerals *	------	9,848,086
Total value		$10,537,050

* Includes barite, bentonite, borates, brick, calcium chloride, cement, fluorspar, gems, manganese ore, mineral water, iron ore, potash, salt, soda, tungsten ore.

SAN DIEGO

Land area: 4221 square miles.
Population: 209,477 (1930 census).
Location: Extreme southwest corner of state.
County seat: San Diego.
References: State Mineralogist Report XIV: XVII: XVIII: XIX: XX:XXI (July, 1925), XXX.

San Diego County ranks twenty-ninth in the total value of its mineral output for the year 1934 with fifteen different mineral substances on the commercial list. The value for 1934 was $487,266, as compared with the 1933 output worth $620,881.

Commercial production for 1934 was as follows:

Substance	*Amount*	*Value*
Brick and hollow building tile	------	$24,506
Gold	------	25,514
Granite	6,333 cu. ft.	11,167
Silver	289 fine ozs.	187
Stone, miscellaneous	------	212,884
Other minerals *	------	213,008
Total value		$487,266

* Includes bromine, clay (pottery), copper, feldspar, magnesium chloride, mineral water, salt, silica (quartz), tube-mill pebbles.

SAN FRANCISCO

Land area: 46½ square miles.
Population: 637,212 (1930 census).
County seat: San Francisco.
References: State Mineralogist Report XVII: XVIII: XX: XXV (April, 1929).

Surprising as it may appear at first glance, San Francisco County is listed among the mineral producing sections of the State, actual production consisting mainly of crushed rock, sand, gravel and mineral water.

In fifty-third place, commercial production for 1934 was as follows:

Substance	*Value*
Unapportioned *	$28,641

* Includes mineral water and miscellaneous stone.

SAN JOAQUIN

Land area: 1448 square miles.
Population: 102,871 (1930 census).
Location: Central portion of state.
County seat: Stockton.
References: State Mineralogist Report XIV: XVII: XVIII: XXI (April, 1925).

San Joaquin County reported a mineral production for 1934, having a total value of $148,097, as compared with $153,127 for 1933. In forty-third place, commercial production for 1934 was as follows:

Substance	*Amount*	*Value*
Gold	------	$1,133
Silver	3 fine ozs.	2
Stone, miscellaneous	------	77,507
Other minerals *	------	69,455
Total value		$148,097

* Includes brick and hollow building tile and natural gas.

SAN LUIS OBISPO

Land area: 3334 square miles.
Population: 29,617 (1930).
Location: Bordered by Kern County on the east and the Pacific Ocean on the west.
County seat: San Luis Obispo.
References: State Mineralogist Report XV: XVII: XVIII: XXI (Oct., 1925).

The total value of the mineral production of San Luis Obispo County in 1934, with eleven different mineral substances, was $138,453, as compared with $55,914 for 1933. In forty-fourth place, commercial production for 1934 was as follows:

Substance	*Amount*	*Value*
Gold	------	$1,946
Quicksilver	1,302 flasks	91,677
Silver	8 fine ozs.	5
Stone, miscellaneous	------	11,860
Other minerals *	------	32,965
Total value		$138,453

* Includes brick, granite (tuff), mineral water, chromite, petroleum, sandstone, volcanic ash.

SAN MATEO

Land area: 447 square miles.
Population: 77,338 (1930 census).
Location: Peninsula, adjoined by San Francisco on the north.
County seat: Redwood City.
References: State Mineralogist Report XVII: XVIII: XXV (April, 1929): XXIX.

San Mateo County had a mineral output in 1934 of eight different substances having a total value of $1,562,490, as compared with the 1933 production worth $1,569,480.

In nineteenth place, commercial production for 1934 was as follows:

Substance	*Value*
Stone, miscellaneous	$24,000
Other minerals *	1,538,490
Total value	$1,562,490

* Includes cement, limestone (shells), magnesium carbonate, natural gas, petroleum, salt.

SANTA BARBARA

Land area: 2740 square miles.
Population: 65,075 (1930 census).
Location: Southwestern portion of State, adjoining San Luis Obispo on the south.
County seat: Santa Barbara.
References: State Mineralogist Report XV: XVII: XVIII: XIX: XXI (Oct., 1925).

Santa Barbara County owes its position of seventh in the State in regard to its mineral output to the presence of productive oil fields within its boundaries. The total value of its mineral production during the year 1934 was $7,570,191, as compared with the 1933 output of $7,011,773.

With eight different substances, commercial production for 1934 was as follows:

Substance	*Amount*	*Value*
Natural gas	4,860,533 M cu. ft.	$316,360
Petroleum	6,648,120 bbls.	6,322,148
Stone miscellaneous	------	51,602
Other minerals *	------	880,081
Total value		$7,570,191

* Includes bituminous rock, brick, diatomite, marble (flagstones), mineral water.

SANTA CLARA

Land area: 1328 square miles.
Population: 144,921 (1930 census).
Location: West-central portion of state.
County seat: San José.
References: State Mineralogist Report XVII: XVIII: XX: XXVI (Jan., 1930): XXIX.

Santa Clara County reported a mineral output for 1934 of $386,445, as compared with the 1933 figures of $534,378.

In thirty-third place with nine mineral substances, commercial production for 1934 was as follows:

Substance	*Amount*	*Value*
Brick and hollow building tile	------	$54,154
Clay (pottery)	701 tons	442
Limestone (marl & shells)	26,809 tons	84,033
Quicksilver	39 flasks	2,813
Stone, miscellaneous	------	190,958
Other minerals *	------	54,045
Total value		$386,445

* Includes magnesite, natural gas, petroleum.

SANTA CRUZ

Land area: 435 square miles.
Population: 37,405 (1930 census).
Location: Bordering Pacific Ocean, just south of San Mateo County.
County seat: Santa Cruz.
References: State Mineralogist Report XVII: XVIII: XXII (Jan., 1926): XXIX.

The mineral output of Santa Cruz County, a portion of which is itemized below, amounted to a total of $1,796,844 for 1934, giving the county a standing of sixteenth among all others in the State in this regard. This is an increase over the 1933 figures of $1,234,180.

Commercial production for 1934 was as follows:

Substance	*Amount*	*Value*
Gold	------	$130
Silver	2 fine ozs.	1
Stone, miscellaneous	------	84,744
Other minerals *	------	1,711,969
Total value		$1,796,844

* Includes bituminous rock, cement, coal, iron ore, lime, limestone.

SHASTA

Land area: 3858 square miles.
Population: 13,925 (1930 census).
Location: North-central portion of state.
County seat: Redding.
References: State Mineralogist Report XIV: XVII: XVIII: XIX: XXII (April, 1926): XXIX (Jan., April, 1933): XXX.

Shasta County stood twenty-first in California among the mineral producing counties in 1934, with an output valued at $1,145,180, as compared with the 1933 production worth $1,113,395.

With eight mineral substances, commercial production for 1934 was as follows:

Substance	*Amount*	*Value*
Copper	388,775 lbs.	$31,102
Gold	------	718,583
Silver	26,012 fine ozs.	16,816
Stone, miscellaneous	------	147,070
Other minerals *	------	231,609
Total value		$1,145,180

* Includes lead, platinum, pyrite.

SIERRA

Land area: 923 square miles.
Population: 2419 (1930 census).
Location: Eastern border of state just north of Nevada County.
County seat: Downieville.
References: State Mineralogist Report XVI: XVII: XVIII: XX: XXV (April, 1929).

Sierra County reported a mineral production of $1,046,307 in 1934, which was mainly gold, as compared with the 1933 output worth $449,146.

In twenty-third place, commercial production for 1934 was as follows:

Substance	*Amount*	*Value*
Copper	757 lbs.	$61
Gold	------	1,027,582
Lead	2,104 lbs.	78
Silver	7,032 fine ozs.	4,546
Stone, miscellaneous	------	14,040
Total value		$1,046,307

SISKIYOU

Land area: 6256 square miles.
Population: 25,505 (1930 census).
Location: Extreme north-central portion of state, next to Oregon boundary.
County seat: Yreka.
References: State Mineralogist Report XIV: XVII: XVIII: XIX: XX: XXI (Oct., 1925): XXVIII (Jan., 1931): XXIX: XXX.

Siskiyou, fifth county in California in regard to size, located in a highly mineralized and mountainous country, ranks twenty-seventh in regard to mineral output with nine mineral substances for 1934. The 1933 production was valued at $374,178.

Commercial production for 1934 was as follows:

Substance	*Amount*	*Value*
Gold	------	$528,395
Silver	2,879 fine ozs.	1,861
Stone, miscellaneous	------	67,216
Other minerals *	------	50,694
Total value		$648,166

* Includes copper, lead, mineral water, pumice, tube-mill pebbles.

SOLANO

Land area: 822 square miles.
Population: 40,807 (1930 census).
Location: Touching San Francisco Bay on the northeast.
County seat: Fairfield.
References: State Mineralogist Report XIV: XVII: XVIII: XXIII (April, 1927).

Solano, while mostly valley land, produced mineral substances during the year 1934 to the total value of $23,641, ranking it fifty-sixth among the counties of the State, compared with the 1933 output worth $16,996.

Commercial production was as follows:

Substance	*Value*
Unapportioned *	$23,641

* Includes onyx marble, travertine, miscellaneous stone.

SONOMA

Land area: 1577 square miles.
Population: 62,248 (1930 census).
Location: South of Mendocino County, bordering on the Pacific Ocean.

County seat: Santa Rosa.
References: State Mineralogist Report XIV : XVII : XVIII : XXII (July, 1926).

Sonoma County ranks forty-second among the counties of California, during 1934, with a mineral output valued at $162,005, as compared with the 1933 figures of $157,988.

Commercial production for 1934 was as follows:

Substance	*Amount*	*Value*
Mineral water	12,944 gals.	$2,786
Quicksilver	393 flasks	27,228
Stone, miscellaneous	------	130,616
Unapportioned	------	1,375
Total value		$162,005

STANISLAUS

Land area: 1450 square miles.
Population: 56,624 (1930 census).
Location: Center of State, bounded on south by Merced County.
County seat: Modesto.
References: State Mineralogist Report XIV : XVII : XVIII : XXI (April, 1925).

Gold has usually been the chief mineral product of Stanislaus County, but it was exceeded in 1918–1919 by manganese, and in 1921–1923 and 1925–1930 by miscellaneous stone. This county for 1934 ranked thirty-first in the State in regard to minerals, with an output valued at $418,172, as compared with $298,847 in 1933.

Commercial production for 1934 was as follows:

Substance	*Amount*	*Value*
Gold	------	$239,158
Silver	841 fine ozs.	544
Stone, miscellaneous	------	63,337
Other minerals *	------	115,133
Total value		$418,172

* Includes clay (pottery), magnesite, platinum.

SUTTER

Land area: 608 square miles.
Population: 14,618 (1930 census).
Location: Bounded by Butte County on the north and Sacramento on the south.
County seat: Yuba City.
References: State Mineralogist Report XV : XVII : XVIII.

Sutter is one of only two counties in the State which for a number of years reported no commercial output of some kind of mineral substance. In 1917 some crushed rock was taken out, from the Marysville Buttes, also in 1925–1928.

There has been some utilization of natural gas. Both clay and coal exist here, but deposits of neither mineral have been placed on a productive basis. During 1934, there was a mineral output, which was valued at $3,322.

TEHAMA

Land area: 2893 square miles.
Population: 13,839 (1930 census).
Location: North-central portion of the State, bounded on the north by Shasta.
County seat: Red Bluff.
References: State Mineralogist Report XV: XVII: XVIII: XIX: XXIV (July, 1928).

Tehama County stands fiftieth among the mineral producing counties of the State for 1934, with an output valued at $39,575, as compared with the 1933 yield worth $30,334.

Commercial production for 1934 was as follows:

Substance	*Amount*	*Value*
Gold	------	$1,146
Silver	2 fine ozs.	1
Stone, miscellaneous	------	38,427
Total value		$39,575

TRINITY

Land area: 3166 square miles.
Population: 2811 (1930 census).
Location: Northwestern portion of State.
County seat: Weaverville.
References: State Mineralogist Report XIV: XVII: XVIII: XIX: XX: XXII (Jan., 1926): XXIX (Jan., April, 1933): XXX.

Trinity County's 1934 output of minerals was valued at $650,620, as compared with the 1933 figures of $359,503, mainly due to gold which gives the county the rank of twenty-sixth for the year.

Commercial production for 1934 was as follows:

Substance	*Amount*	*Value*
Copper	359 lbs.	$29
Gold	------	574,681
Silver	2,537 fine ozs.	1,640
Stone, miscellaneous	------	62,522
Other minerals *	------	11,748
Total value		$650,620

* Includes coal, platinum, quicksilver.

TULARE

Land area: 4856 square miles.
Population: 77,375 (1930 census).
Location: Bounded by Inyo on the east, Kern on the south, Fresno on the north.
County seat: Visalia.
References: State Mineralogist Report XV: XVII: XVIII: XX.

Tulare County stands thirty-ninth on the list of mineral producing counties for 1934, with eleven different mineral substances, having a total value of $184,474, as compared with the 1933 figures of $178,613.

Commercial production for 1934 was as follows:

Substance	*Amount*	*Value*
Copper	404 lbs.	$32
Gold	------	5,114
Lead	2,697 lbs.	100
Silver	145 fine ozs.	94
Stone, miscellaneous	------	139,875
Other minerals *	------	39,259
Total value		$184,474

* Includes barite, brick, petroleum, gems, tungsten ore.

TUOLUMNE

Land area: 2190 square miles.
Population: 9239 (1930 census).
Location: East-central portion of State—Mother Lode District.
County seat: Sonora.
References: State Mineralogist Report XIV: XVII: XVIII: XIX: XX: XXIV (Jan., 1928).

Tuolumne County ranks thirtieth among the counties of the State relative to its total value of mineral output for 1934 with nine different substances. This county ranks first as a producer of marble in the State. The mineral production for 1934 was valued at $423,588, as compared with $264,979 for 1933.

Commercial production for 1934 was as follows:

Substance	*Amount*	*Value*
Gold	------	$269,256
Silver	1,775 fine ozs.	1,147
Stone, miscellaneous	------	5,578
Other minerals *	------	147,607
Total value		$423,588

* Includes chromite, lime, limestone, marble, slate.

VENTURA

Land area: 1878 square miles.
Population: 54,577 (1930 census).
Location: Southwestern portion of State, bordering on Pacific Ocean.
County seat: Ventura.
References: State Mineralogist Report XV: XVII: XVIII: XX: XXI: XXVIII (July-Oct., 1932).

Ventura is fifth county in the State in respect to the value of its mineral output for 1934. The 1934 mineral production was worth $13,688,749, as compared with the 1933 output valued at $14,558,096.

With ten different mineral substances, commercial production for 1934 was as follows:

Substance	*Amount*	*Value*
Gold	------	$4,435
Natural gas	40,767,122 M cu. ft	2,032,849
Petroleum	12,007,550 bbls.	11,331,335
Silver	10 fine ozs.	6
Stone, miscellaneous	------	291,845
Other minerals *	------	28,279
Total value		$13,688,749

* Includes brick and hollow building tile, clay (oil-well drilling-mud), granite (flagstone), limestone (marl).

YOLO

Land area: 1017 square miles.
Population: 23,618 (1930 census).
Location: Sacramento Valley, bounded by Sutter on the east and Colusa on the north.
County seat: Woodland.
References: State Mineralogist Report XIV: XVII: XVIII.

Yolo County in fifty-first place has a commercial production for 1934 as follows, compared with $16,823 for the preceding year:

Substance	*Amount*	*Value*
Gold	------	$176
Silver	1 fine oz.	1
Stone, miscellaneous	------	37,850
Total value		$38,027

YUBA

Land area: 639 square miles.
Population: 11,327 (1930 census).
Location: Lies west of Sierra and Nevada counties; south of Plumas.
County seat: Marysville.
References: State Mineralogist Report XV: XVII: XVIII: XX: XXVI (July, 1930).

Yuba County ranks fifteenth among the counties of the State as a mineral producer and fourth in respect to gold, which is obtained mainly by dredgers. The 1933 output was valued at $1,150,962.

Commercial production for 1934 was as follows:

Substance	*Amount*	*Value*
Gold	------	$1,911,960
Silver	4,545 fine ozs.	2,938
Stone, miscellaneous	------	31,099
Unapportioned	------	5,049
Total value		$1,951,046

CHAPTER EIGHT

TOTAL RECORDED MINERAL PRODUCTION BY COUNTIES

Herein in the tabulations following we present the total mineral yield of each county of the state from the earliest available records to and including 1934. These tables were previously printed in the November, 1922, chapter of State Mineralogist's Report XVIII which included the data to the end of 1921; then in Bulletin 101, California Mineral Production for 1927, which included the data to the end of 1927.

In a number of cases it is known that there were productions of specific minerals in the years previous to the earliest years shown in these tabulations; but unfortunately, there are few detailed or accurate records showing county segregations prior to 1894 when compilation of the statistical records of the California State Mining Bureau began. For gold and silver, the published reports of the U. S. Geological Survey and the Director of the Mint give county segregations back to 1880; but, prior to that year, we have only the state total annually. In the case of quicksilver, there are authentic records for all of the important mines, from which we have compiled county tables for the early years.

The "unapportioned" column is necessitated by the fact that in many cases there is but a single operator or mine producing a given mineral in the county. As it is the policy of the Division of Mines not to reveal the individual's private business without his consent, we combine the values of such products.

Year	Brick		Chromite		Pottery clay		Coal		Manganese	
	M	Value	Tons	Value	Tons	Value	Tons	Value	Tons	Value
1890			[1]397	$534					[2]	
1891			257	344						
1892										
1893										
1894	7,500	$37,500							468	$4,962
1895	12,000	60,000							600	5,400
1896	7,000	35,000							318	3,415
1897	6,500	35,750					21,900	$50,370	504	4,080
1898	7,000	35,000					70,500	176,250	440	2,102
1899	10,000	60,000					80,703	242,109	290	3,090
1900	5,000	40,000					91,731	332,066	130	1,300
1901	9,590	67,130					87,424	262,272	423	4,365
1902	10,000	60,000					67,850	203,550	870	7,140
1903	10,300	82,400					[2]			
1904	10,500	90,000					[2]		60	900
1905	12,000	95,500								
1906	21 345	413,750			10,000	$10,000				
1907	28,770	474,350			12,610	14,299				
1908	1,800	10,800	70	595	16,370	44,822			260	4,680
1909	14,800	140,000	[2]		45,348	205,194				
1910	20,919	195,889	69	552	9,541	63,925				
1911	19,660	153,330	60	500	10,500	8,300				
1912	12,800	133,100							20	360
1913	13,977	122,937			3,000	2,700				
1914	22,668	159,205			5,000	1,000				
1915	14,841	132,765							319	3,652
1916	23,551	315,941	612	7,344	4,060	2,750			562	9,005
1917	and tile	290,033	52	960	6,502	4,524			1,211	30,250
1918		258,812	220	14,600	2,675	3,850			2,746	109,874
1919		369,778	80	1,264	5,011	12,127			[2]	
1920		664,918			3,001	3,762			[2]	
1921		365,853			6,079	7,405			[2]	
1922		[2]			[2]				130	1,020
1923		828,048			2,850	10,422				
1924		763,476			2,482	1,124				
1925		938,375			9,300	11,376				
1926		808,779			5,870	7,183				
1927		587,402			6,593	20,516				
1928		505,386			27,189	17,071				
1929		304,326			7,037	6,980				
1930		307,712			10,103	20,063				
1931		248,569			5,505	3,048				
1932		161,001			7,333	4,887				
1933		179,152			4,101	3,946				
1934		192,527			[3]					
Totals		$10,724,494	[2]1,817	$26,693	[3]228,060	$491,274	[3]420,108	$1,266,617	9,351	$195,595

[1]There was some production of chromite, manganese and salt in Alameda County in the years previous to those here shown but the separate county figures are not available.

[2]Includes crushed rock, macadam, ballast, rubble, rip-rap, sand, gravel.

[3]See under 'Unapportioned.'

ALAMEDA COUNTY, 1890-1934

Pyrites		Salt		Miscellaneous stone,[1] value	Miscellaneous and unapportioned		
Tons	Value	Tons	Value		Amount	Value	Substance
----------	----------	[1]	----------	----------	----------	----------	
----------	----------	----------	----------	----------	----------	----------	
----------	----------	----------	----------	----------	----------	----------	
----------	----------	----------	----------	----------	----------	----------	
----------	----------	44,450	$125,125	$73,463	1,265 cu. ft.	$1,000	Building stone
----------	----------	43,810	114,575	94,372	500 cu. ft.	300	Sandstone.
----------	----------	55,826	122,810	69 405	----------	----------	
----------	----------	61,353	139,830	73,300	----------	----------	
----------	----------	87,800	155,812	73,845	2,000 cu. ft.	750	Sandstone.
----------	----------	78,434	137,088	66,512	----------	----------	
----------	----------	64,718	158,674	107,551	30 tons	180	Magnesite.
4,500	$18,000	114,450	324,136	107,201	13,728 lbs.	2,162	Copper.
					190 tons	1,100	Magnesite.
14,323	53,301	80,000	160,000	182,295	1,500 lbs.	52	Lead.
					100 tons	500	Magnesite.
21,811	88,500	76,877	143,605	200,702	10,000 tons	15,000	Lime.
15,043	62,992	52,990	76,340	284,181	----------	----------	
15,503	63,958	49,100	54,200	449,029	----------	----------	
14,000	56,000	68,450	126,838	496,482	500 tons	1,750	Glass sand.
16,482	54,410	54,922	163,127	512,607	1,416 tons	14,400	Asphalt.
					11,943 tons	143,376	Asphalt.
13,404	70,782	78,462	108,694	465,653	3 tons	48	Soapstone.
					250 tons	625	Glass sand.
8,105	40,516	104,978	214,808	340,208	18,290 tons	241,475	Asphalt.
					----------	233,032	Unapportioned, 1900-09, inclusive.
10,938	53,170	131,868	285,217	408,591	18,290 tons	197,783	Asphalt.
					40 tons	260	Soapstone.
6,340	31,352	121,540	201.542	404,615	----------	----------	
7,267	29,068	126,211	212,150	420,283	----------	----------	
6,029	24,128	129,318	233,388	456,064	5,000 bbls.	5,000	Lime.
					50 tons	250	Limestone.
9,829	34,696	126,983	292,641	381,135	150 tons	1,500	Magnesite.
					10 tons	20	Limestone
11,287	45,148	103,768	220,977	457,381	----------	1,740	Asbestos, chromite, pottery clay.
16,394	65,110	111,206	263,773	403,587	----------	26,657	Limestone, magnesium chloride, magnesite.
[2]	----------	148,846	315,970	413,845	----------	83,141	Lime, limestone, magnesite, magnesium salts, potash, pyrites.
9,113	45,565	130,132	410,345	311,320	----------	19,169	Asbestos, magnesium salts, potash, limestone.
8,978	42,902	157,751	552,178	309,572	----------	16,864	Magnesium salts, manganese, potash.
10,602	55,251	145,368	574,837	620,758	----------	28,354	Magnesium salts, manganese, mineral paint, potash.
13,449	70,669	108,925	370,296	513,641	----------	25,826	Magnesium salts, manganese, mineral paint, potash.
[2]	----------	139,556	434,076	760,422	----------	845,936	Brick, hollow building tile, magnesium, salt, pyrite.
[2]	----------	177,389	585,585	965,465	----------	97,515	Magnesium salts, pyrite.
[2]	----------	189,217	635,653	1,158,886	----------	75,506	Magnesium salts, potash, pyrite.
[2]	----------	180,712	497,692	1,414,398	----------	54,665	Magnesium salts, potash, pyrite.
[2]	----------	202,777	628,470	1,642,618	----------	71,414	Bromine, magnesium salts, pyrite.
[2]	----------	180,623	366,346	1,538,017	----------	65,506	Magnesium salts, potash, pyrite.
[3]	----------	224,000	611,888	1,267,155	----------	20,330	Pyrite, travertine.
					321,844 lbs.	48,016	Copper.
[3]	----------	264,666	1,623,397	1,592,232	104 fine oz.	55	Silver.
					----------	51,717	Mineral paint, pyrite.
[3]	----------	232,808	694,371	1,436,608	41 fine oz.	16	Silver.
					----------	70,567	Copper, pyrite.
[3]	----------	[3]	----------	1,008,124	----------	1,158,184	Bromine, limestone (shells).
					12,545 lbs.	790	Copper pyrite, salt.
[3]	----------	[3]	----------	813,165	49 fine oz.	14	Silver.
					----------	785,282	Limestone (shells), pyrite.
[3]	----------	[3]	----------	649,105	----------	1,097,908	Lime, limestone (shells), mineral paint, pyrite, salt.
[3]	----------	[3]	----------	1,090,371	----------	1,096,735	Clay (pottery), bromine, lime, limestone, pyrite, salt.
[4]233,697	$1,005,527	[4]4,450,284	$12,336,454	$24,034,164	----------	$6,602,470	

MINERAL PRODUCTION OF ALPINE COUNTY, 1880-1934

Year	Gold, value	Silver, value	Copper		Miscellaneous and unapportioned	
			Pounds	Value	Value	Substance
1880	$17,133	$24,146				
1881	2,000	2,100				
1882	20,000	10,000	70,895	$13,115		
1883	10,000	5,000	[1]			
1884	5,000	4,000				
1885						
1896	400					
1897						
1901	23,568	2,860	8,377	1,319		
1902	10,359	3,770				
1903	2,701	146				
1904	4,827	145				
1905	575					
1909					$5,465	Unapportioned, 1900-1909.
1913	537	4				
1914						
1919					100	Crushed rock.
1920	[2]	[2]			680	Miscellaneous stone.
					160	Gold and silver.
1921					925	Miscellaneous stone.
1922					2,800	Miscellaneous stone.
1923						No commercial production.
1924		[2]	[2]		2,552	Lead and stone, miscellaneous.
1925	[2]	[2]			520	Miscellaneous stone.
1926					450	Miscellaneous stone.
1927	146	60			5,100	Miscellaneous stone.
1928	23	363			174	Lead.
					2,800	Miscellaneous stone.
					5,169	Copper and granite.
1929			7,260	1,278	31,735	Miscellaneous stone.
1930					2,500	Miscellaneous stone.
1931	16	13				
1932	647	241			1,100	Miscellaneous stone.
					7	Copper, lead.
1933	1,651	1,091	323	21	43	Lead (1,169 lbs.).
					9,918	Unapportioned.
1934	3,726	2,371	448	36	58	Lead (1,564 lbs.).
					8,856	Unapportioned.
Totals	[2]$103,309	$56,310	[2]87,303	$15,769	$81,112	

[1] "Small production of cement copper" reported in 1883, but record does not show exact figures.
[2] Under 'Unapportioned.'

Year	Gold, value	Silver, value	Coal		Copper		Pottery clay		Lime	
			Tons	Value	Pounds	Value	Tons	Value	Barrels	Value
1880	$1,495,053	$1,953								
1881	1,450,000	1,500								
1882	1,500,000									
1883	1,590,000									
1884	2,000,000	2,000								
1885	2,145,591	3,700								
1886	1,874,062	6,136								
1887	1,979,956	2,069								
1888	1,750,000	3,500	24,404	$36,606						
1889	1,560,975	6,398	30,000	45,000						
1890	1,459,952	9,357								
1891	1,395,962	13,895	21,323	31,984						
1892	1,210,383	8,008								
1893	1,505,973	5,230								
1894	1,331,916	280	15,280	23,020			2,500	$3,000		
1895	1,391,929	1,089	21,323	31,985	16,500	$1,650	9,960	10,285		
1896	1,523,351	3,767	19,775	29,662	30,000	3,000	8,413	27,825		
1897	1,324,472	3,477	20,000	25,000			3,492	9,540		
1898	1,806,363	1,742	18,500	29,550	3,000	300	7,197	8,297		
1899	1,544,868	6,902	18,500	23,125			10,700	10,900		
1900	1,373,788	14,915	27,477	41,215	220,000	34,100	11,500	9,100		
1901	1,823,827	7,444	25,000	30,000	52,000	8,190	10,050	7,100		
1902	1,629,151	2,686	5,450	10,912	130,000	14,620	12,723	13,728		
1903	1,609,744	4,336			10,000	900	22,000	19,460		
1904	2,060,574	4,055			14,000	1,400	20,608	10,770	1,700	$1,700
1905	2,445,815	17,930			10,000	1,560	21,775	20,000	1,000	1,500
1906	2,260,373	14,579			8,648	1,669	26,789	28,119	1,000	1,200
1907	2,116,182	13,515			5,300	1,020	12,465	13,992		
1908	1,876,175	13,239			53,940	3,440	23,322	25,369	800	960
1909	2,298,785	16,701			288,472	36,641	33,563	32,724	1,200	1,440
1910	2,646,246	20,916			151,484	14,386	39,446	49,339	1,400	1,680
1911	2,832,395	28,899			227,848	28,481	43,352	37,359	1,200	1,500
1912	2,796,194	32,037			175,608	28,975	35,100	36,856	800	1,040
1913	2,901,898	18,097			19,023	2,949	39,678	38,653	1,000	1,200
1914	3,082,002	17,032	5,700	10,062	5,251	694	32,223	33,114	1,540	2,008
1915	3,894,125	20,409			4,185	732	40,156	38,879	1,000	1,200
1916	3,660,550	18,705	[1]		12,349	3,038	29,246	31,106	[1]	
1917	3,664,164	21,358	[1]		19,352	5,283	28,970	28,625		
1918	3,249,385	29,590	[1]		[1]		13,562	34,346		
1919	2,920,492	33,254	[1]				[1]			
1920	1,788,793	19,780	[1]				25,719	61,808		
1921	2,167,443	35,460					22,124	46,664		

[1] See under 'Unapportioned.'

AMADOR COUNTY, 1880–1934

Marble		Brick		Miscellaneous and unapportioned		
Cu. ft.	Value	M	Value	Amount	Value	Substance
25,941	$35,826					
4,864	6,566					
4,389	5,415					
3,864	6,280					
2,850	3,594					
4,582	7,925					
4,103	5,891				$318,422	Unapportioned, 1900-1909
2,945	4,630	600	$7,000			
6,300	8,016					
3,074	5,379					
4,785	6,558				750	Glass sand.
2,703	3,950					
				1,000 tons	1,200	Limestone.
				10 tons	1,000	Asbestos.
		2,109	61,369	1,072 lbs.	40	Lead.
				1,000 tons	1,375	Limestone.
		1,429	28,572	2 tons	200	Asbestos.
				41 tons	332	Chromite.
				1,000 tons	1,500	Limestone.
		2,000	30,000	10,100 tons	10,100	Quartz sand.
				11,200 cu. ft.	5,600	Sandstone.
				600 tons	6,000	Soapstone.
		2,000	20,000	90,000 cu. ft.	45,000	Sandstone.
		2,500	25,000	6,000 cu. ft.	3,000	Sandstone.
				700 tons	2,100	Soapstone.
				2,500 cu. ft.	2,500	Sandstone.
				350 tons	2,420	Soapstone.
		2,000	30,000	1,960 tons	3,556	Quartz.
				877 tons	670	Glass sand.
					670	Miscellaneous stone.
					11,237	Other minerals.
				16,888 tons	9,855	Glass sand.
				44 lbs.	2	Lead.
		2,500	50,000	6,250 tons	2,400	Quartz.
				3,960 cu. ft.	1,500	Sandstone.
				610 tons	2,440	Soapstone.
				523 lbs.	25	Lead.
		4,000	80,000	13,339 tons	16,142	Silica.
					1,300	Miscellaneous stone.
					10,950	Other minerals.
				300 tons	3,700	Chromite
				4,341 tons	12,802	Silica.
		1		495 tons	2,475	Soapstone.
					1,300	Miscellaneous stone.
		and tile			77,752	Brick, coal, lime, manganese, sandstone.
				65 tons	1,420	Chromite.
			95,345	4,771 tons	20,766	Silica.
					1,200	Miscellaneous stone.
					13,033	Coal, lead, manganese, platinum, soapstone, zinc.
				88 tons	4,400	Chromite.
				13,747 tons	61,724	Silica.
			1		6,500	Miscellaneous stone.
					66,695	Brick, coal, copper, manganese, mineral paint, platinum, soapstone.
					142,523	Clay and clay products.
			1	8,440 tons	67,366	Silica.
					9,953	Coal, manganese, platinum, sandstone, soapstone.
			1	6,116 tons	36,432	Silica.
					680	Miscellaneous stone.
					102,707	Brick, coal, mineral paint, platinum, soapstone.
			1	1,802 tons	20,646	Silica.
					1,125	Miscellaneous stone.
					97,126	Brick and platinum.

Year	Gold, value	Silver, value	Coal		Copper		Pottery clay		Lime	
			Tons	Value	Pounds	Value	Tons	Value	Barrels	Value
1922	$2,241,10 0	$32,287	-------	----------	----------	----------	39,572	$68,126	-------	--------
1923	1,734,133	15,153	-------	----------	----------	----------	45,887	58,196	-------	--------
1924	2,706.508	18,251	[1]	----------	[1]	----------	64,317	87,444	-------	--------
1925	2,338,101	16,123	[1]	----------	[1]	----------	63,889	95,946	-------	--------
1926	2,167,275	13,422	[1]	----------	[1]	----------	-------	----------	-------	--------
1927	1,922,714	11,319	[1]	----------	[1]	----------	118,636	165,210	[1]	--------
1928	2,236,922	14,317	[1]	----------	1,402	202	96,209	116,000	-------	--------
1929	1,601,861	9,392	[1]	----------	[1]	----------	60,487	88,846	-------	--------
1930	1,840,191	7,100	[1]	----------	[1]	----------	74,023	103,160	-------	--------
1931	1,549,073	4,783	[1]	----------	[1]	----------	32,275	57,751	-------	--------
1932	1,307,760	3,865	[1]	----------	1,454	92	20,284	26,373	-------	--------
1933	1,945,261	6,471	[1]	----------	13,922	891	18,341	26,016	-------	--------
1934	2,274,275	10,544	[1]	----------	7,254	580	28,620	50,833	-------	--------
Totals	$112,804,091	$648,867	[1]252,732	$368,121	[1]1,482,092	$194,793	1,249,173	$1,630,859	[1]12,640	$15,428

[1] See under 'Unapportioned.'
[2] Includes brick and platinum.
[3] Includes brick and soapstone.
[4] Includes brick, coal, copper and lead.
[5] Includes coal, copper, lead and marble.
[6] Includes brick, coal, copper and silica.

AMADOR COUNTY, 1880-1934—Continued

Marble		Brick		Miscellaneous and unapportioned		
Cu. ft.	Value	M	Value	Amount	Value	Substance
				865 tons	$5,030	Silica.
					7,300	Miscellaneous stone.
					125,220	Other minerals.[2]
					28,515	Miscellaneou s stone.
					119,877	Other minerals.[3]
					3,050	Miscellaneous stone.
					123,612	Other minerals.[4]
					31,100	Miscellaneous stone.
					11,003	Other minerals.[5]
					237,792	Brick and clay (pottery).
		1		1,267 lbs.	101	Lead.
					24,900	Miscellaneous stone.
					8,010	Other minerals.[6]
		1		2,491 lbs.	157	Lead.
					10,400	Miscellaneous stone.
					97,998	Other minerals.[6]
			1		189,900	Miscellaneous stone.
					86,838	Brick, coal.
1			1		696,500	Miscellaneous stone.
					101,618	Brick, coal, copper, lead, marble.
1			1		388,129	Miscellaneous stone.
					86,107	Brick, coal, copper, lead, marble, platinum.
1			1		491,456	Miscellaneous stone.
					67,933	Brick, coal, copper, lead, marble.
					89	Lead.
1			1	2,981 lbs.	19,626	Miscellaneous stone.
					42,481	Brick, coal, marble.
					1,178	Lead.
			1	31,845 lbs.	48,781	Brick, coal, marble, miscellaneous stone.
					223	Lead.
			1	6,102 lbs.	12,115	Miscellaneous stone.
					51,591	Brick, coal, gems (diamonds).
[1]70,400	$100,030		[1]$427,286		$4,276,521	

Year	Diamonds, value	Gold, value	Mineral water		Platinum	
			Gallons	Value	Ounces	Value
1880		$430,501				
1881		650,000				
1882		650,000				
1883		630,000				
1884		680,000				
1885		672,569				
1886		728,160				
1887		632,902				
1888		550,000				
1889		696,628				
1890		268,977				
1891		304,765				
1892		316,999				
1893		307,351				
1894		473,673				
1895		697,261				
1896		749,316	1,900	$775		
1897		667,025	2,160	900		
1898		514,508	2,685	900		
1899		486,846	2,480	1,240		
1900		485,589	15,000	1,515		
1901		864,978	10,400	1,455		
1902		916,782	14,000	1,500		
1903		1,571,507	13,000	1,550	14	$210
1904		1,932,552	12,600	1,512	66	1,000
1905		2,607,500	15,000	1,500	110	1,770
1906		3,016,747	19,500	1,950	26	475
1907		2,786,840	21,400	2,140		
1908		3,139,398	22,450	2,450		
1909		2,987,079	25,400	1,400		
1910		2,487,791				
1911	$150	2,323,396				
1912		2,346,229				
1913	175	2,269,849	1,000	250		
1914	100	1,700,000	1,200	300	119	381
1915	300	1,545,976	5,000	850	126	3,997
1916	357	1,257,231	3,150	1,125	76	3,472
1917	125	922,271	3,500	1,450	119	9,106
1918	125	645,975	3,900	1,680	114	7,723
1919	[3]	378,297	6,532	2,388	33	5,071
1920	400	467,900	6,400	5,200	fine oz. 42	4,714
1921	331	456,760	2,900	4,100	31	2,432
1922	225	491,201	2,835	2,485	fine oz. 30	3,826
1923		487,393	3,700	3,300	fine oz. 19	2,601
1924		484,530	6,000	4,500	fine oz. 20	2,829
1925		355,289	4,484	2,742	fine oz. 56	9,177
1926	175	287,853			fine oz. 10	954
1927		143,494				
1928		48,432	2,190	1,045		
1929	[8]550	71,917				

[1] Includes crushed rock, rubble, rip-rap, sand and gravel.
[2] See under 'Unapportioned.'
[3] Includes diamonds, natural gas, soapstone.
[4] Includes natural gas and soapstone.
[5] Includes brick, copper, gems (diamonds), lead, natural gas, soapstone.
[6] Includes clay (pottery), mineral water, natural gas, soapstone.
[7] Includes copper, gems (diamonds, sapphires), natural gas and soapstone.
[8] Diamonds and precious serpentine.
[9] Includes brick, mineral water, natural gas and soapstone.

BUTTE COUNTY, 1880-1934

Silver, value	Miscellaneous stone,[1] value	Miscellaneous and unapportioned		
		Amount	Value	Substance
$1,247				
1,000				
3,700				
13				
6				
500				
518				
5,815				
229				
610				
5,504				
8,936				
5,390				
7,885		700 M	$4,200	Brick.
9,317		250 M	1,500	Brick.
		150 tons	3,000	Mineral paint.
5,009		300 M	1,800	Brick.
		900 tons	9,900	Mineral paint.
13,082		600 bbls.	600	Lime.
4,634		900 M	7,200	Brick.
		1,500 bbls.	1,500	Lime.
2,219		800 M	5,000	Brick.
		400 bbls.	750	Lime.
		1,200 M	7,200	Brick.
358		250 bbls.	250	Lime.
		190 tons	250	Limestone.
2,302		670 M	4,020	Brick.
7,134		400 M	3,200	Brick.
10,853		130 M	1,300	Brick.
8,967				
12,708	$7,916			
7,205	32,140	200 M	1,200	Brick.
			107,170	Unapportioned, 1900-1909.
6,429	34,932	645 lbs.	27	Lead.
5,102	78,208			
5,567	51,879			
5,163	258,503			
4,000	50,895	513 lbs.	20	Lead.
		90 lbs.	4	Lead.
3,433	67,143		540	Chromite.
		11 lbs.	2	Copper.
3,332	67,892	1,451 tons	13,940	Chromite.
			9,576	Other minerals.
		5,746 tons	104,085	Chromite.
2,991	89,870	378 lbs.	32	Lead.
			329	Copper, manganese, natural gas.
2,410	77,822	3,325 tons	134,535	Chromite.
			2,765	Manganese and natural gas.
1,911	92,765		1,105	Gems and natural gas.
2,253	[2]		161,095	Natural gas and miscellaneous stone.
1,759	203,900		548	Other minerals.
1,890	220,450		548	Other minerals.
1,756	340,250		6,648	Other minerals.[3]
2,118	138,000		225	Gems.
			9,548	Other minerals.[4]
4,354	156,738		17,878	Other minerals.[5]
2,997	147,604	273 M	4,316	Brick.
			18,046	Other minerals.[6]
371		40 lbs.	5	Copper.
		130 lbs.	8	Lead.
729	556,301	960 M	16,320	Brick.
			17,481	Other minerals.[7]
175	485,187		4,108	Limestone.
			22,382	Other minerals.[9]

Year	Diamonds, value	Gold, value	Mineral water		Platinum	
			Gallons	Value	Ounces	Value
1930	25	$126,858	[1]		[1]	
1931	250	172,383	[1]		[1]	
1932	50	265,589	[1]		[1]	
1933	150	296,159	[1]		[1]	
1934	150	544,000	[1]		[1]	
Totals	$3,638	$52,993,226	[1]341,866	$52,202	[1]1,011	$63,168

[1] See under 'Unapportioned.'

BUTTE COUNTY, 1880-1934—Continued

Silver, value	Miscellaneous stone,[1] value	Miscellaneous and unapportioned		
		Amount	Value	Substance
$422	$400,239	353 lbs.	$46	Copper.
			12,076	Mineral water, natural gas, platinum, soapstone.
650	300,225	2,108 lbs.	192	Copper.
			9,037	Brick, mineral water, natural gas, platinum, soapstone.
717	191,487	715 lbs.	45	Copper.
			6,624	Lead, mineral water, natural gas, platinum, soapstone.
971	98,992	1,133 lbs.	73	Copper.
			8,316	Lead, mineral water, natural gas, platinum, soapstone.
3,172	80,971	1,805 lbs.	144	Copper.
			9,527	Brick, lead, mineral water, natural gas, soapstone.
$189,442	$4,230,309	----------	$752,236	

Year	Gold, value	Silver, value	Copper		Mineral paint (oehre)		Clay	
			Pounds	Value	Tons	Value	Tons	Value
1880	$320,865	$643	[1]					
1881	800,000	1,200						
1882	670,000							
1883	500,000							
1884	485,000							
1885	527,538	2,558						
1886	639,457	4,926						
1887	640,417	1,477						
1888	580,000	1,500						
1889	592,243	1,071						
1890	618,821	2,499						
1891	738,883	4,860						
1892	794,531	24,441						
1893	1,669,192	122						
1894	2,119,365	5,183	654,866	$64,951	115	$2,530		
1895	1,717,916	77	175,895	16,925				
1896	1,546,398	500	87,557	8,990				
1897	1,439,861	1,745			150	2,400		
1898	1,019,023	3,462	18,400	2,052	100	225		
1899	1,265,564	9,813	165,484	27,586				
1900	1,649,126	80,762	980,934	150,585	400	3,800		
1901	2,024,685	44,687	1,701,389	268,000	125	500		
1902	2,072,939	46,234	2,087,501	251,062	259	778		
1903	1,904,125	68,280	2,246,675	297,263	200	1,000		
1904	1,789,184	65,611	2,592,124	414,399	70	385	100	$10(
1905	1,836,816	78,859	3,666,810	572,022	379	1,900	40	30(
1906	1,644,234	74,099	5,082,320	956,315			50	25(
1907	1,097,974	54,420	3,941,883	609,203				
1908	1,378,511	62,727	4,804,446	555,704	50	250	25	25(
1909	1,440,511	71,418	5,438,908	690 632			100	50(
1910	1,147,705	82 866	7,345,321	778,369			30	25(
1911	1,112,315	67,032	6,190,153	773,769			50	20(
1912	962,145	70,748	6,125,415	1,010,693			4,281	4,43(
1913	1,175,208	61,076	5,063,187	784,794	28	190	2,000	4,50(
1914	1,336,875	60,244	4,468,998	594,377			280	28(
1915	1,391,134	53,298	4,031,149	705,451	[2]			
1916	1,356,120	83,643	6,099,509	1,500,479				
1917	1,471,442	87,984	7,720,861	2,107,795	[2]			
1918	871,263	84,150	6,762,882	1,670,432				
1919	1,550,574	35,876	2,049,330	381,175				
1920	1.439,745	16,701	2,112,186	388,642				
1921	1.495,758	10,232	[3]					

[1] The Union Mine at Copperopolis was a produeer as early as 1861, but there are no detailed, annual figures available for Calaveras County earlier than here shown.

[2] Under 'Unapportioned.'

[3] Ineludes erushed roek, sand, gravel.

CALAVERAS COUNTY, 1880-1934

Mineral water		Limestone		Quartz crystals, value	Miscellaneous and unapportioned		
Gallons	Value	Tons	Value		Amount	Value	Substance
				$18,000	717 tons	$3,583	Pyrites.
				17,500			
					3,500 bbls.	5,500	Lime.
					25 tons	375	Chromite.
		3,087	$15,430	10,000	20 tons	300	Chromite.
		3,994	7,635		40 tons	280	Chromite.
					13.9 ozs.	250	Platinum.
		6,872	16,955	10,000			
		14,165	31,446	10,000			
		4,590	11,987			$50,075	Unapportioned, 1900-1909.
		6,283	16,976				
10,000	$5,000	3,943	11,733		220 lbs.	10	Lead.
7,528	3,764						
					2,500 lbs.	25	Graphite.
11,500	5,500	2,000	1,400		7,006 lbs.	308	Lead.
						9,900	Other minerals.
Totals		44,934	$119,062				
		Miscellaneous stone[3], value					
					650 tons	4,550	Chromite.
15,508	6,517				290 tons	2,618	Fuller's earth.
					30 lbs.	1	Lead.
					9 oz.	294	Platinum.
					163 lbs.	8	Lead.
15,343	5,752		$1,900			4,350	Asbestos, fuller's earth, mineral paint, platinum, silica.
					1,636 tons	12,570	Chromite
					7,238 lbs.	499	Lead.
18,255	7,025		2,503		54 oz.	2,453	Platinum.
						300	Other minerals.
					1,613 tons	34,245	Chromite.
					6,395lbs.	550	Lead.
16,985	7,009		2,700		20oz.	1,433	Platinum.
						3,922	Clay, fuller's earth, mineral paint, silica, zinc.
					3,830 tons	159,453	Chromite.
10,938	6,069		420		10 oz.	598	Platinum.
						2,067	Asbestos and lead.
					2,019 lbs.	107	Lead.
4,384	1,034		600		8 oz.	1,076	Platinum.
						8,116	Other minerals.
					20 fine oz.	2,002	Platinum.
5,120	512		2,400	[2]		30,048	Quartz crystals and lead.
					12 fine oz.	876	Platinum.
2,809	791		17,527			17	Copper and lead.

Year	Gold, value	Silver, value	Copper		Mineral paint (ochre)		Clay	
			Pounds	Value	Tons	Value	Tons	Value
1922	$1,413,465	$11,648	[2]				[2]	
1923	1,205,784	7,316	1,598,776	$235,020			[2]	
1924	853,961	7,463	4,724,441	618,902			[2]	
1925	652,433	8,324	4,906,650	696,744			[2]	
1926	576,889	6,229	5,240,927	733,730			[2]	
1927	219,217	3,982	750,909	98,367			[2]	
1928	162,372	1,469	150,911	21,731			[2]	
1929	103,843	3,444	1,200,494	211,287			[2]	
1930	112,913	1,555	1,857,248	241,442				
1931	152,771	989	184	17				
1932	186,378	763						
1933	442,980	1,927	2,248	144			[2]	
1934	1,274,862	7,021	144	11			[2]	
Totals	$58,191,331	$1,489,352	112,047,115	$18,439,060	[2]1,876	$13,958	[2]6,956	$11,0(

[2] Under 'Unapportioned.'

CALAVERAS COUNTY, 1880-1934—Continued

Mineral water		Miscellaneous stone	Quartz crystals, value	Miscellaneous and unapportioned		
Gallons	Value	Value		Amount	Value	Substance
1,914	$639	$35,590	[2]	22 fine oz.	$2,150	Platinum.
					39,391	Clay (pottery), copper, gems.
1,626	569	39,825	[2]		9,605	Clay (pottery), quartz crystals, lead, platinum.
1,400	139	83,250			8,704	Clay (pottery), gems (quartz crystals), lead, platinum, silica (quartz), soapstone.
[2]		78,506	[2]		14,611	Clay (pottery), gems (quartz crystals), lead, mineral water, platinum.
[2]		59,000	[2]		433,924	Cement, clay (pottery), gems (quartz crystals), lead, mineral water, soapstone.
[2]		[2]	[2]	222 tons	5,063	Chromite.
				4,606 lbs.	290	Lead.
					1,281,795	Cement, clay (pottery), gems (quartz crystals), soapstone, miscellaneous stone.
[2]		557,020	[2]	2,817 lbs.	163	Lead.
					2,059,787	Cement, quartz crystals, mineral water, platinum, soapstone.
[2]		360,982	[2]	8,227 lbs.	521	Lead.
					1,896,182	Cement, clay, quartz crystals, mineral water.
[2]		818,507	[2]	1,297 lbs.	65	Lead.
					909,474	Cement, quartz crystals, mineral water.
[2]		185,810	[2]	4,386 lbs.	162	Lead.
					753,805	Cement, quartz crystals, mineral water, platinum.
[2]		49,254	[2]	642 lbs.	19	Lead.
					498,785	Cement, pottery clay, quartz crystals, mineral water, copper.
[2]		46,436		6,363 lbs.	253	Lead.
					447,259	'Unapportioned.'
[2]		48,339		612 lbs.	23	Lead.
					866,436	Cement, pottery clay, mineral water.
[2]123,310	$50,320	$2,390,569	[2]$65,500		$9,565,791	

Year	Gold and silver, value	Quicksilver		Sandstone	
		Flasks	Value	Cubic feet	Value
1875		700	$58,905		
1876		407	17,908		
1877		466	17,382		
1878					
1879					
1880	[2]$4,908				
1881	3,500				
1882	2,575				
1883	1,000				
1884	1,530				
1885	45,000				
1886	11,617				
1887	7,461				
1888	6,000				
1889	13,626				
1890	2,810				
1891					
1892					
1893	300				
1894				20,000	$7,500
1895		1	40		
1896		58	2,054		
1897		43	1,510		
1898					
1899					
1900		275	12,359		
1901	1,800	235	10,575	88,981	80,082
1902	850	605	26,500	99,395	87,456
1903		510	21,708	146,828	312,500
1904		[3]400	16,526	100,000	290,000
1905		326	12,321	118,954	276,908
1906				88,821	101,802
1907	742	17	648	86,954	78,259
1908	584	21	900	73,284	43,971
1909	[4]	11	545	47,070	24,634
1910	[4]			112,947	56,505
1911	[5]3,118	5	230	101,029	50,027
1912				51,137	15,804
1913				34,927	15,550
1914				16,000	7,300
1915					
1916		285	26,648	[6]	
1917					
1918					
1919					
1920					
1921					
1922	[6]				
1923					
1924					
1925				[6]	
1926					
1927					
1928					
1929		[6]			
1930		[6]			
1931		[6]			
1932	372	[6]			
1933	57	[6]			
1934	480	[6]			
Totals	$108,330	[6]4,365	$226,359	[6]1,186,327	$1,448,298

[1] Includes crushed rock, rubble, rip-rap, sand, gravel.
[2] 1880 to 1890, U. S. Mint reports.
[3] Flasks of 76½ pounds previous to June, 1904; of 75 pounds thence, through 1927; of 76 pounds since January, 1928.
[4] Included with Lassen County production.
[5] Includes Lassen County production.
[6] See under 'Unapportioned.'

COLUSA COUNTY, 1875-1934

Mineral water		Miscellaneous stone[1], value	Miscellaneous and unapportioned		
Gallons	Value		Amount	Value	Substance
			40 tons	$400	Salt.
50,090	$12,530				
31,500	1,620		8 tons	160	Salt.
21,000	1,050		21 tons	439	Salt.
5,000	1,120		20 tons	300	Salt.
53,500	12,350		20 tons	80	Salt.
92,200	20,220		18 tons 270 M	270 2,160	Salt. Brick.
142,305	79,698		18 tons	396	Salt.
174,000	85,900		18 tons	360	Salt.
156,170	38,051	$1,250	18 tons 300 M	180 1,800	Salt. Brick.
160,000	80,000		18 tons	225	Salt.
197,375	49,344		150 tons	1,700	Salt.
254,075	51,233	3,500	16 tons	240	Salt.
200,000	88,000	850	10 tons	125	Salt.
150,000	75,000	620		104,508	Unapportioned, 1900-1909.
150,000	75,000	16,500			
136,300	68,150	16,702		1,596	Unapportioned.
165,330	39,061	15,300			
132,720	32,931				
92,000	24,951				
91,480	15,003	1,000			
[6]		550		15,605	Mineral paint, mineral water, sandstone.
[6]		600		15,721	Mineral paint and mineral water.
[6]		700		15,700	Chromite, mineral paint, mineral water.
		4,900		2,400	Other minerals.
		57,488			
		80,000		438	Other minerals.
[6]		[6]		79,534	Gold, mineral water, silver, miscellaneous stone.
		75,000			
		75,167		2,100	Other minerals.
[6]		[6]		103,230	Mineral water, sandstone, miscellaneous stone.
		75,167		16,027	Unapportioned.
		13,200		7	Unapportioned.
		16,500		20,000	'Unapportioned.'
		35,000		7,570	Petroleum, quicksilver, sulphur.
		45,900		4,240	Petroleum, quicksilver, sulphur.
[6]		88,680		30,680	Mineral water, quicksilver, sulphur.
[6]		23,858		13,823	Mineral water, quicksilver.
[6]		[6]		8,839	Mineral water, petroleum, quicksilver, miscellaneous stone.
[6]		34,625		10,770	Mineral water, petroleum, quicksilver.
[5]2,445,045	$851,212	[6]$683,057		$461,053	

Year	Brick		Coal*		Lime	
	M	Value	Tons	Value	Barrels	Value
1894			35,000	$94,000		
1895			48,635	139,655		
1896	150	$4,500	44,892	118,709		
1897			39,267	105,180		
1898	5,000	25,000	47,000	113,340		
1899			53,013	131,613		
1900			51,248	145,000		
1901			35,000	100,000		
1902	800	11,600	13,960	31,160		
1903	2,600	16,000			5,300	$4,50
1904	9,385	67,495			12,187	10,35
1905	10,979	73,948			20,244	13,92
1906	23,267	169,022				
1907	48,573	403,564			1,413	1,41
1908	55,844	335,737				
1909	41,033	268,122			14,062	15,46
1910	30,284	199,079			17,338	14,75
1911	36,463	271,575			11,872	8,64
1912	32,621	283,718			14,870	12,64
1913	30,411	212,953			150,551	127,96
1914	16,064	129,543	67	268	5,666	4,72
1915	14,915	139,862	[1]			
1916	16,672	148,730	[1]			
1917	and tile	172,653	[1]			
1918	and tile	148,831				
1919		[1]				
1920	13,608	312,398				
1921		[1]				
1922	and tile	307,749				
1923		[1]				
1924	and tile	327,225				
1925		[1]				
1926		[1]				
1927		303,302				
1928	[2]					
1929	[2]					
1930						
1931	[2]					
1932	[2]					
1933	and tile	268,235				
1934	[2]					
Totals		[2]$4,600,841	[3]368,082	$978,925	253,503	$214,392

[1] Includes crushed rock, rubble, rip-rap, sand, gravel.
[2] See under 'Unapportioned.'
[3] Estimated.
[4] The Ryne Mine on Mt. Diablo was active in 1875-1877 (inc.) and produced as high as 85 flasks per month at one stage; but total amount not available.

* Coal mining began in the Mount Diablo section of Contra Costa County at least as early as 1861, but there are no segregated county figures available earlier than those here shown. For 1867-1882 (inc.), there are records which indicate for the Mount Diablo field a total of approximately 2,500,000 tons, valued at $14,300,000.

CONTRA COSTA COUNTY, 1894-1934

Limestone		Mineral water		Miscellaneous stone[1], value	Miscellaneous and unapportioned		
Tons	Value	Gallons	Value		Amount	Value	Substance
							Quicksilver, 1875-1877 (inc.)[4]
		7,600	$3,700	$9,000	1,400 tons	$2,200	Pottery clay.
		5,000	1,200				
		9,300	3,100				
		10,000	3,500				
		12,000	1,900				
		12,000	1,900				
		31,200	8,736		31,700 lbs.	3,645	Copper.
18,000	$22,500	78,000	19,500				
		78,000	19,000	23,060			
34,800	43,500	[3]		76,120			
				75,025			
22,038	43,038			210,250	2,057 tons	21,870	Asphalt.
9,140	18,282	109,400	5,470	236,047	9,500 tons	123,500	Asphalt.
					6,000 tons	7,500	Pottery clay.
22,556	42,837	199,800	10,590	233,782	17,085 tons	222,105	Asphalt.
						683,392	Unapportioned, 1900-1909.
22,912	37,064	2,500	375	235,655			
68,708	46,208	206,500	10,325	257,503			
25,879	45,291	200,000	10.000	478,162			
26,259	34,976	192,292	4,989	660,405		921,349	Other minerals.
32,657	43,661	364,288	3,643	308,727		658,755	Other minerals.
11,989	14,565	[3]350,000	4,000	397,330		757,748	Asbestos, cement, coal.
[3]		351,724	6,154	363,753		760,423	Cement, clay, coal, limestone.
		436,265	8,563	322,507		772,934	Cement and coal.
		30,376	3,038	324,884	100 tons	300	Pottery clay.
						847,198	Cement and copper.
		[3]		275,309		193,340	Clay and clay products.
						926,909	Cement and mineral water.
				432,654	1,743 tons	3,319	Pottery clay.
						1,333,682	Cement and mineral water.
		600,300	6,099	415,127		198,248	Clay and clay products.
						1,003,258	Other minerals.
				559,915	7,086 tons	12,910	Pottery clay.
						1,516,788	Cement, limestone, mineral water.
				629,216		281,743	Clay and clay products.
						1,761,985	Cement, limestone, mineral water.
				646,369		1,374,496	Clay (pottery), cement, limestone, mineral water.
				708,159		1,836,020	Clay (pottery), and clay products, cement, limestone, mineral water.
[3]		[2]		766,921		448,584	Clay and clay products.
						1,395,048	Cement, limestone and mineral water.
[3]		[3]		816,140		1,053,314	Cement, clay (pottery), limestone and mineral water.
		[2]		590,792		1,609,690	Brick and hollow tile, cement. clay, coal, mineral water.
		[2]		413,837	7,003 tons	6,327	Pottery clay.
						1,407,792	Brick and hollow tile, cement, mineral water, glass sand.
						102,036	Gold.
					199,186 fine ozs	76,687	Silver.
		[2]		398,613		1,065,950	Brick and hollow tile, cement, clay, mineral water, quicksilver, glass sand.
		[2]		351,825	5,368 tons	3,813	Pottery clay.
						973,204	Brick and hollow tile, cement, mineral water, glass sand.
		[2]		231,590		782,403	Brick and hollow tile, cement, clay, mineral water, quicksilver, glass sand.
		[2]		322,483		641,253	Cement, clay, mineral water, glass sand.
		[2]		408,412		1,326,587	Brick and hollow building tile, cement, pottery clay, mineral water, sandstone, silica (glass sand.)
[2]294,938	$391,922	[2]3,286,545	$135,782	$12,179,572		$27,118,255	

MINERAL PRODUCTION OF DEL NORTE COUNTY, 1880-1934

Year	Gold, value	Silver, value	Platinum		Miscellaneous stone[1], value	Miscellaneous and unapportioned		
			Ounces	Value		Amount	Value	Substance
1880	$215,403	$300						[2]
1881	60,000							
1882	80,000							
1883	135,000							
1884	100,000							
1885	39,390	9						
1886	76,189							
1887								
1888								
1889	21,800							
1890	900							
1891	5,586							
1892	4,102							
1893	10,352							
1894	8,000							
1895	8,250							
1896	24,150							
1897	16,710							
1898	9,057							
1899	4,450							
1900	3,483							
1901	10,612							
1902	5,450							
1903	7,183							
1904	7,399		1.5	$18				
1905	10,590		1.5	22				
1906	5,945	33						
1907	878	3						
1908	3,488	19				74,787 lbs.	$9,984	Copper.
1909	1,610	52				24,449 lbs.	13,085	Copper.
							20,000	Unapportioned, 1900-09.
1910	2,388	62				26,670 lbs.	3,395	Copper.
1911	1,743	7						
1912	3,940	10						
1913	2,498	16						
1914	2,035	9	14	643	$3,250			
1915	1,018	6			3,500			
1916	405	2	2	73	1,685		267	Chromite and copper.
1917	1,373	8	10	853	2,700	3,275 tons	97,255	Chromite.
							2,151	Other minerals.
1918	565	4	1	97	8,000	7,143 tons	360,485	Chromite.
							2,584	Other minerals.
1919	867	6			6,300		67	Other minerals.
1920					9,000		2,781	Chromite and copper.
1921	[2]	[2]	[2]		5,580		449	Gold, platinum, silver.
1922	[2]	[2]	[2]		5,500		761	Gold, platinum, silver.
1923	1,778	9	[2]		31,368		872	Copper and platinum.
1924	325		[2]		721,720		220	Unapportioned.
1925	681	1			269,650		250	Other minerals.
1926	1,078	4	10	1,132	68,250			
1927	384	1			53,350		240	Other minerals.
1928	277	1			381,080			
1929		3			83,380	5,002 lbs.	880	Copper.
1930	279	1			175,227		523	'Unapportioned.'
1931	1,372	1			36,702			
1932	2,195	2			23,416		188	'Unapportioned.'
1933	1,933	3	[3]		[3]		1,126	Platinum, miscellaneous stone.
1934	6,078	13	[3]		73,883		24	'Unapportioned.'
Totals	$909,279	$585	[3]40	$2,838	$1,963,541		$514,587	

[1] Includes crushed rock, rubble, rip-rap, sand, gravel.

[2] Gold, copper and chromite were produced in Del Norte County earlier than the years shown, but the amounts are not separable by counties. Some quicksilver was obtained in the 50's but there is no record of amount.

[3] See under 'Unapportioned.'

Year	Gold, value	Silver, value	Copper		Lime	
			Pounds	Value	Tons	Value
1880	$389,383	$208				
1881	550,000	900				
1882	600,000					
1883	530,000					
1884	575,000	16,000				
1885	35,000					
1886	619,992	1,822				
1887	706,871	365				
1888	650,000	500				
1889	427,638	408				
1890	204,583	275				
1891	173,279	359				
1892	198,321					
1893	294,610	1,220				
1894	366,707	356			1,600	$8,000
1895	700,101	448			4,560	28,500
1896	812,289	534			706	4,158
1897	674,626	886			2,160	6,750
1898	501,966	4,174			538	3,360
1899	404,497	8,414			1,270	7,935
1900	368,541	25,129	3,125	$500	1,200	6,000
1901	292,036	5,977			1,760	11,000
1902	335,031	52	2,128	319	3,936	16,176
1903	277,304	-			896	7,000
1904	474,994				2,058	7,075
1905	384,735	2,525	160,000	24,960	1,482	6,946
1906	431,746	2,690			3,075	21,138
1907	319,177	2,301		122	1,782	16,198
1908	342,033	5,504	603	83	2,547	20,192
1909	238,284	1,299			2,212	14,591
1910	171,304	967			1,808	9,944
1911	133,967	1,010			2,414	12,309
1912	105,565	843			2,244	11,218
1913	62,688	250	693	107		
1914	133,886	654			2,240	12,082
1915	401,288	1,353	417	73	2,546	12,872
1916	361,821	1,496	[3]		[3]	
1917	24,758	85	18,982	5,182	[3]	
1918	28,352	722	22,259	5,498		
1919	30,121	279				
1920	13,379	155				
1921	34,109	301				
1922	47,340	376				
1923	30,264	185				
1924	28,207	153				
1925	40,212	238				
1926	91,789	472			[3]	
1927	82,254	383	[3]			
1928	122,017	697	1,074	155		
1929	57,680	236	[3]		[3]	
1930	78,019	250			[3]	
1931	85,322	283	[3]		[3]	
1932	182,043	438	850	54	[3]	
1933	540,939	1,458	2,755	176	[3]	
1934	1,380,710	6,035	4,312	345	8,250	85,938
Totals	$17,146,788	$101,873	[3]217,198	$37,574	[3]51,284	$329,382

[1] In addition to the segregated figures herein given, a large tonnage of limestone is annually shipped from El Dorado County for use in cement manufacture, and whose value is included in the state total for cement.

[2] Includes crushed rock, rubble, rip-rap, sand, gravel.

[3] See under 'Unapportioned.'

[4] There was a small production of quicksilver in the 60's, but no record of amounts.

EL DORADO COUNTY, 1880-1934

Limestone		Slate		Miscellaneous stone[2], value	Miscellaneous and unapportioned.		
Tons	Value	Squares	Value		Amount	Value	Substance
[1]							[4]
		1,800	$11,700				
		1,350	9,450				
		500	2,500				
500	$250	400	2,800				
		400	2,800				
		600	4,500				
		3,500	26,250			$251,820	Unapportioned, 1900-09.
		5,100	38,250				
		4,000	30,000				
		6,000	50,000		10 tons	162	Asbestos.
1,050	5,775	4,000	40,000		112 tons	2,625	Asbestos.
		10,000	100,000		20 tons	1,000	Asbestos.
5,394	15,318	7,000	60,000				
		6,000	50,000	$1,600	200 M	8,000	Paving blocks.
		6,961	45,660	530	3,763 tons	5,645	Sand (glass).
		1,000	8,000	2,616	1,200 tons	1,800	Sand (glass).
1,000	1,000			5,465	3,701 lbs.	167	Lead.
				4,375			
				4,678			
				2,600	90 lbs.	4	Lead.
		[4]		7,500		5,250	Slate and soapstone.
[4]				12,000	5,260 tons	72,560	Chromite.
						19,613	Lime and limestone.
					886 tons	1,717	Silica.
						1,480	Copper and soapstone.
[4]				6,200	8,319 tons	167,950	Chromite.
						104,851	Lime and limestone.
					2,684 tons	4,506	Silica.
						70	Other minerals.
96,673	218,120			20,500	11,936 tons	674,856	Chromite.
						11,236	Pyrites, silica, soapstone
					378 tons	6,510	Chromite.
41,025	112,423			1,700	1,600 tons	13,950	Soapstone and talc.
						1,169	Other minerals.
41,109	139,873			5,500	2,640 tons	18,200	Soapstone.
						9,325	Other minerals.
15,296	66,143			2,750	1,652 tons	9,453	Talc.
42,200	113,700			4,250		18,850	Slate and soapstone.
95,274	163,987			5,900	2,670 tons	15,729	Soapstone.
112,156	322,995			2,538	1,498 tons	8,988	Talc.
						32,691	Copper and lime.
228,293	297,127			10,305		4,946	Lime and silica.
59,386	186,702	[4]		17,510		5,613	Lime, silica, slate.
96,733	146,506	[4]		500		15,792	Copper, gems, silica, soapstone, slate.
57,012	158,252	[3]		17,455	365 tons	8,855	Soapstone.
						21,995	Lead, silica, slate.
71,033	199,989	[3]		25,665		83,930	Copper, lime, silica, slate, soapstone.
88,869	205,225	[3]		96,599		113,105	Lead, lime, silica, slate, soapstone.
79,798	207,594	[3]		37,494		107,242	Chromite, copper, lead, lime, silica, slate, soapstone.
105,094	207,241	[3]		[3]		97,126	Lead, lime, platinum, silica, slate, soapstone, miscellaneous stone, tungsten ore.
120,026	208,049	[3]		7,551		90,586	Lead, lime, slate, soapstone.
112,237	152,422	[3]		7,400		18,405	Lead, silica (quartz), slate, soapstone.
1,468,138	$3,158,691	[3]58,611	$481,910	$301,181		$2,027,772	

Year	Gold, value	Silver, value	Copper		Petroleum		Brick		Miscellaneous stone[1] value
			Pounds	Value	Barrels	Value	M	Value	
1880	$143,433								
1881	90,000								
1882	80,000								
1883	100,000								
1884	80,000								
1885	74,500	$2,456							
1886	151,186	2,701							
1887	205,242	274							
1888	200,000	2,800							
1889	185,988	4,629							
1890	49,951	1,816							
1891	82,607	10,396							
1892	[2]112,981	[2]6							
1893	7,118								
1894	8,202								
1895	47,249								
1896	28,235	100			14,119	$56,750			
1897	43,144				70,140	70,840			
1898	27,557				154,000	154,000	2,500	$18,000	
1899	18,142				439,372	439,372	5,500	38,500	
1900	22,346	479			547,960	547,960	4,250	35,062	
1901	21,462		1 159,672	$182,648	525,433	236,444	5,000	35,000	
1902	54,427		3,000,000	345,000	571,233	199,931	6,000	45,000	
1903	21,538	111			2,214,160	730,673	8,000	68,000	$11,0
1904	7,809	4	2,500	319	5,114,958	1,520,847	4,800	32,400	
1905	40,037	9,187	1,440,000	224,640	8,890,000	2,400,300	9,000	60,000	
1906	8,493	83	440,000	88,000	8,402,000	1,974,470	8,000	64,000	
1907	2,401	26	250,000	50,000	9,050,300	3,620,120	9,230	57,350	10,5
1908	1,054	11			10,725,389	5,898,964	13,220	106,960	16,9
1909	17,539	8,503	876,837	111,341	15,406,619	9,243,971	7,950	49,375	28,4
1910	3,373	2,980	486,725	61,999	18,651 470	9,277,241	9,533	76,267	58,0
1911	17,441	81			19,499,611	9,344,085	4,500	28,500	318,9
1912	6,094	23			19,510,932	8,487,255	5,000	40,000	307,1
1913	2,846	15			18,956,965	7,927,736	5,500	44,000	416,4
1914	10,231	31			15,952,190	7,210,389	4,500	36,000	237,9
1915	4,151	246	65,903	11,533	14,021,025	7,641,459	4,750	33,250	193,7
1916	693	69	29,173	7,177	14,594,246	7,530,631	[3]		95,8
1917	5,745	289	40,662	11,101	16,259,797	13,414,333	[3]		136,7
1918	4,795	37			16,068,919	19,138,083	and tile	89,156	244,6
1919	5,540	67			16,091,037	20,805,711	[3]		241,21
1920	7,793	227			15,375,454	22,801,798	12,517	196,756	535,5
1921	13,085	75			12,161,565	18,643,679	[3]		486,0
1922	10,442	87			9,265,529	9,895,582		220,737	600,34
1923	18,519	128			5,061,542	3,593,695	[3]		863,087
1924	32,978	190			10,156,405	11,801,743		95,104	451,540
1925	25,056	151			7,773,665	8,503,390	[3]		457,307
1926	8,595	52			7,340,102	5,982,183		87,493	388,555
1927	17,406	77			7,202,284	5,977,176		89,145	1,118,761

FRESNO COUNTY, 1880-1934

Mineral water		Magnesite		Natural gas		Miscellaneous and unapportioned		
Gallons	Value	Tons	Value	M cu. ft.	Value	Amount	Value	Substance
						216 tons	$700	Coal.
						500 tons	4,000	Gypsum.
						600 tons	4,800	Gypsum.
1,200	$400					50 tons	400	Gypsum.
1,886	350							
2,000	900					100 tons	600	Gypsum.
2,000	900					16 tons	320	Asphalt.
5,000	4,000						268,534	Unapportioned, 1900-1909.
5,142	5,142							
5,000	4,500							
7,200	7,200					839 tons	10,068	Asphalt.
4,800	2,400	38	$120			579 tons	6,948	Asphalt.
						500 tons	5,500	Asphalt.
						9,000 tons	26,000	Clay
		850	8,500			400 tons	4,400	Asphalt.
		1,400	22,400			200 tons	2,600	Asphalt.
							750	Gems.
		220	2,195				250	Gems.
						50 tons	950	Chromite.
		2,000	20,000	200,000	$21,380		700	Gems.
						336 flasks	14,125	Quicksilver.
		1,135	9,080	236,100	23,610	375 flasks	15,086	Quicksilver.
				250,000	15,000	148 flasks	7,259	Quicksilver.
				2,894,834	253,906	1,300 tons	13,600	Chromite.
							450	Other minerals.
						9,060 tons	151,824	Chromite.
						11,000 cu. ft.	25,000	Granite.
		5,829	49,082	2,346,917	163,941	668 lbs.	46	Lead.
							36,900	Brick, fuller's earth, mineral water.
						6,289 tons	109,292	Chromite.
		6,077	57,422	4,097,626	347,501		31,500	Granite.
							44,150	Asbestos, brick, mineral water, quicksilver.
						2,314 tons	86,181	Chromite.
		1,795	16,151	5,009,327	267,123		26,800	Granite.
						35 flasks	3,652	Quicksilver.
		600	5,950	5,191,287	411,356		34,500	Granite.
							140,128	Chromite and brick.
		906	8,725	3,721,313	201,865		49,600	Granite
							17,000	Other minerals.
							125,276	Clay and clay products.
		945	9,540	1,886,081	190,181		28,610	Granite.
							2,000	Other minerals.
							28,600	Granite.
				1,694,090	89,277		8,360	Other minerals.
							217,880	Clay and clay products.
				1,599,354	122,702		64,920	Granite.
							2,400	Other minerals.
				1,430,708	102,286		60,447	Granite.
							3,600	Other minerals.
				1,515,889	116,711		63,580	Granite.
							98,801	Clay and clay products, mineral water.
				1,920,489	153,726	17,880 cu. ft.	78,624	Granite.
							800	Other minerals.
				1,682,652	148,227	17,186 cu. ft.	74,424	Granite.
							2,000	Other minerals.

Year	Gold, value	Silver, value	Copper		Petroleum		Brick		Miscellaneous stone[1], value
			Pounds	Value	Barrels	Value	M	Value	
1928	$15,455	$75	[3]		4,611,440	$3,524,985	[3]		$362,260
1929	13,575	79	[3]		3,498,107	1,781,586	[3]		301,542
1930	5,916	21	[3]		3,362,902	1,910,128	[3]		[3]
1931	6,512	15	[3]		2,991,976	1,649,476	[3]		202,748
1932	12,445	32	[3]		3,665,641	2,038,096	[3]		116,494
1933	19,459	48	[3]		4,516,246	2,586,906	[3]		59,363
1934	24,066	87	[3]		6,607,661	4,295,980	[3]		[4]
Totals	$2,224,852	$48,827	[5]7,791,472	$1,093,758	335,322,394	$242,857,968	[3]	$1,645,965	[3]$8,261,159

[1] Includes crushed rock, rubble, rip-rap, sand, gravel.
[2] To end of 1892, includes Madera County, which was created March 11, 1893.
[3] See under 'Unapportioned.'
[4] Brick and hollow building tile, copper, gems, mineral water, pumice, quicksilver.
[5] Brick and hollow building tile, copper, diatomite, gems, mineral water, volcanic ash.
[6] Brick and hollow building tile, diatomite, granite, gypsum, mineral water, volcanic ash, miscellaneous stone.
[7] Brick and hollow building tile, chromite, diatomite, gems, granite, gypsum, marl, mineral water, quicksilver, volcanic ash.
[8] Brick and hollow building tile, diatomite, gems, granite, gypsum, marl, mineral water, quicksilver, volcanic ash.
[9] Brick and hollow building tile, pottery clay, diatomite, granite, gypsum, marl.
[10] Brick and hollow building tile, clay (pottery), copper, diatomite, gems, granite, gypsum, limestone (marl), miscellaneous stone.

FRESNO COUNTY, 1880-1934—Continued

Mineral water		Magnesite		Natural gas		Miscellaneous and unapportioned		
Gallons	Value	Tons	Value	M cu. ft.	Value	Amount	Value	Substance
[3]	----	----	----	1,422,366	$151,061	1,376 cu. ft.	$80,050	Granite.
						----	93,400	Other minerals.[4]
[3]	----	----	----	1,006,110	190,598	----	28,000	Granite.
						10 flasks	1,190	Quicksilver.
						----	13,600	Other minerals.[5]
[3]	----	----	----	393,337	26,108	174 flasks	13,418	Quicksilver.
						----	368,882	Other minerals.[6]
[3]	----	----	----	5,591,304	253,937	----	125,645	Other minerals.[7]
[3]	----	----	----	25,476,752	1,520,285	----	57,039	Other minerals.[8]
[3]	----	----	----	18,807,454	1,191,237	34 flasks	1,541	Quicksilver.
						----	42,549	Other minerals.[9]
[3]	----	----	----	19,680,080	1,235,707	30 flasks	1,208	Quicksilver.
						----	215,759	Other minerals.[10]
[3]34,288	$25,792	21,795	$209,165	108,054,070	$71,956,665	----	$3,047,216	

MINERAL PRODUCTION OF GLENN COUNTY, 1893-1934

Year	Amount	Value	Substance
1893 and previous	3,319 long tons	$49,700	Chromite.
1909	140,000 tons	49,000	Macadam.
1910	378,000 tons	34,020	Rubble.
1911	421,775 tons	51,430	Sand and gravel.
1912	543,675 tons	32,950	Sand and gravel.
1913	416,640 tons	27,776	Sand and gravel.
1914		30,553	Miscellaneous stone.
1915	746 lbs.	131	Copper.
		46,526	Miscellaneous stone.
		10	Other minerals.
1916		41,180	Miscellaneous stone.
		39,982	Other minerals.
1917	879 tons	21,474	Chromite.
	369 tons	9,721	Manganese.
		33,260	Miscellaneous stone.
		817	Other minerials.
1918	1,129 tons	57,263	Chromite.
		32,436	Miscellaneous stone.
1919		58,137	Miscellaneous stone.
		1,500	Other minerals.
1920		134,707	Miscellaneous stone.
1921		103,197	Miscellaneous stone.
1922		91,250	Miscellaneous stone.
1923		113,282	Miscellaneous stone.
1924		41,550	Miscellaneous stone.
1925		92,288	Miscellaneous stone.
1926		58,391	Miscellaneous stone.
1927		63,869	Miscellaneous stone.
1928		101,889	Miscellaneous stone.
1929		81,516	Miscellaneous stone.
1930		61,179	Miscellaneous stone
1931		47,462	Miscellaneous stone.
1932		8,714	Miscellaneous stone.
1933		11,690	Miscellaneous stone.
1934		30,608	Miscellaneous stone.
Totals		$1,659,458	

Year	Gold, value	Silver, value	Mineral water		Brick	
			Gallons	Value	M	Value
1880	$153,940	$80				
1881	75,000	300				
1882	100,000					
1883	80,000					
1884	115,000					
1885	29,730					
1886	83,591					
1887	111,532					
1888	100,000					
1889	143,701	274				
1890	93,612	82				
1891	99,329	19				
1892	87,515					
1893	66,354					
1894	41,326	14	20,000	$7,200		
1895	92,635		24,000	12,000		
1896	65,093		15,000	10,000		
1897	94,992	57	10,000	2,000		
1898	57,512				300	$2,5
1899	65,059		6,000	1,500	410	3,8
1900	109,444	[1]136	6,000	2,000	795	7,1
1901	98,487	[1]59	7,825	2,000	1,005	7,8
1902	60,015		10,000	2,500	2,170	17,0
1903	38,509				1,060	10,4
1904	62,061				2,565	21,3
1905	45,824				800	7,6
1906	48,295	240			915	8,6
1907	40,109	214			140	1,4
1908	33,066	325			760	8,5
1909	25,690	94			1,310	9,7
1910	35,289	150			476	4,0
1911	34,966	169			357	2,8
1912	31,271	150			772	6,4
1913	25,611	132			500	4,1
1914	18,686	57			607	6,1
1915	15,947	62	2,000	500	463	5,5
1916	21,279	55	3,000	750	[2]	
1917	23,086	95	[2]		[2]	
1918	8,028	72	[2]		[2]	
1919	16,260	134	[2]		[2]	
1920	2,538	19			[2]	
1921	2,054	37				
1922	1,330	10	[2]		[2]	
1923	2,260	12	[2]		[2]	
1924	1,269	7	[2]		[2]	
1925	13,142	62				
1926	1,243	6				
1927	1,729	14				
1928	1,788	7			[2]	
1929	2,372	101			[2]	
1930	2,255	9			[2]	
1931	2,678	5			[2]	
1932	2,549	4			[2]	
1933	5,902	11				
1934	28,978	80			[2]	
Totals	$2,619,931	$3,354	[3]103,825	$40,450	[3]15,405	$135,3

[1] Recalculated to 'commercial' from 'coining value' as originally published.
[2] See under 'Unapportioned.'
[3] Includes crushed rock, rubble, rip-rap, sand, gravel.

HUMBOLDT COUNTY, 1880-1934

Miscellaneous stone[3], value	Natural gas		Miscellaneous and unapportioned		
	M cu. ft.	Value	Amount	Value	Substance
$199,240					
251,586					
233,454					
193,502					
297,276					
160,845					
				$362	Platinum.
				140	Platinum.
			12.5 ozs.	204	Platinum.
			30.8 ozs.	555	Platinum.
13,074			1,280 cu. ft.	1,280	Granite.
29,170	600	$300	2,450 tons	7,640	Clay.
				20,985	Unapportioned, 1900-1909.
36,700	1,000	500	250 tons	750	Clay.
37,756	300	150	937 tons	937	Clay.
229,730	300	150	396 tons	400	Clay.
439,808	300	150	7,750 lbs.	1,201	Copper.
208,204	300	150	3 ozs.	115	Platinum.
335,292	[2]			1,320	Copper and natural gas.
60,260	[2]		7 ozs.	296	Platinum.
				192,255	Brick, clay, granite, natural gas.
27,014	[2]		6 ozs.	351	Platinum.
				9,312	Brick, clay, mineral water, natural gas, volcanic ash.
			370 tons	21,744	Chromite.
			210 tons	420	Clay.
51,082	640	85		116	Granite.
			1,520 tons	57,751	Manganese.
			2 ozs.	140	Platinum.
				2,516	Brick, mineral water, pumice.
25,198	[2]			9,271	Brick and clay.
				1,148	Mineral water and natural gas.
133,290	[2]		859 tons	18,513	Manganese.
				5,436	Brick, clay, granite, mineral water, natural gas, volcanic ash.
131,688	[2]		75 tons	190	Pottery clay
				4,628	Brick, mineral water, natural gas, platinum, pumice
				6,399	Brick and clay.
117,308	[2]			153	Mineral water and natural gas.
			4 fine ozs.	413	Platinum.
422,519	[2]			9,915	Clay and clay products, mineral water, natural gas, platinum.
476,449	[2]			7,753	Brick, clay, mineral water, natural gas, platinum.
699,740				6,207	Brick, pottery clay, mineral water, natural gas, platinum.
700,736				4,052	Brick and clay.
				633	Natural gas and platinum.
554,963				6,096	Includes brick, clay, natural gas and platinum.
291,491	[2]			6,941	Brick, natural gas.
			64,553 lbs.	11,361	Copper.
270,422	[2]			9,422	Brick, clay, natural gas.
263,025	[2]			5,344	Brick, clay, natural gas, platinum.
194,324	[2]			2,979	Brick, clay, natural gas, platinum.
112,877	[2]			2,045	Brick, clay, natural gas, platinum.
65,012	[2]			126	Copper, natural gas.
50,371	[2]			2,003	Brick, clay (pottery), natural gas.
$7,313,306	[3]3,440	$1,485		$441,703	

MINERAL PRODUCTION OF IMPERIAL COUNTY, 1907–1934

Year	Brick		Gold, value	Silver, value	Miscellaneous stone, value	Miscellaneous and unapportioned		
	M	Value				Amount	Value	Substance
1907	1,000	$10,000						
1908	2,225	22,250	$5,848	$123		375 lbs.	$51	Copper.
1909	2,000	20,000	59,705	524				
1910	1,680	10,078	[2]87,341	[2]237				
1911	1,200	7,000	[2]97,855	[2]189				
1912	3,250	20,000			$10,000			
1913	5,500	44,000	31,700	94	12,000	750 cu. ft.	7,260	Marble.
1914	4,900	29,400	210,428	8,961		13,081 lbs.	1,730	Copper.
1915	2,958	17,916	14,369	42	40,095	65 lbs.	11	Copper.
							5,000	Other minerals.
1916	[3]		23,338	155	34,834		47,006	Brick, copper, lead, pumice, strontium.
1917	and tile	19,260	919	5	65,660	1,907 tons	38,140	Manganese.
							5,416	Copper, potash, pumice.
1918	and tile	11,670	247	1,248	34,787	1,241 tons	46,900	Manganese.
							14,840	Copper, lead, pumice
1919	[3]			8,607	63,900		67,936	Brick, lead, pumice, salt.
1920	[3]			2,183	127,412	624 tons	16,500	Pumice.
							23,787	Other minerals.
1921	654	6,363	537	920	171,173		3,825	Other minerals.
1922			350	18,024	154,560		15,805	Brick, gypsum, lead marble, pumice.
1923					101,833		162,900	Brick, gold, gypsum pumice, silver, soda (salt cake).
1924			258	1	78,032		61,617	Brick, gems (dumortierite), gypsum pumice.
1925	[3]		[3]	[3]	148,942		182,023	Brick, cyanite, gypsum and pumice.
1926	[3]		238	19	312,130		154,927	Brick, cyanite, gypsum lead and pumice.
1927	[3]		257	3	129,658		221,059	Brick, copper, cyanite gypsum and pumice.
1928	[3]		25	1	98,790		142,862	Brick, copper, cyanite feldspar, gypsum, pumice, silica.
1929			1,030	16	230,199		278,587	Bentonite, copper, cyanite, feldspar, mica pumice, silica.
1930			148		218,686		149,189	Gypsum, pumice, cyanite.
1931			649	1	429,782		97,594	Gypsum, mica, pumice cyanite.
1932			16,212	149	171,694		63,672	Clay (pottery), gypsum mica, pumice, cyanite
1933			6,293	76	86,962		73,527	Carbon dioxide, clay gypsum, mica, cyanite
1934			9,973	71	48,066		50,370	Carbon dioxide, cyanite copper, gypsum, pumice, salt.
Totals		[3]$217,937	[3]$567,720	[3]$41,649	$2,769,195		$1,932,544	

[1] Imperial County was created August, 1907, from a part of San Diego County.
[2] Includes production of San Diego County.
[3] See under 'Unapportioned.'

Year	Gold, value	Silver, value	Lead		Copper		Zinc		Borax, value
			Pounds	Value	Pounds	Value	Pounds	Value	
1880	$48,648	$173,916							
1881	170,000	140,000							
1882	220,000	130,000							
1883	90,000	38,000							
1884	80,000	82,000							
1885	24,998	73,461							
1886	20,156	101,670							
1887	10,649	103,370							
1888	25,000	75,000							
1889	193,957	30,706							
1890	62,432	88,320							
1891	35,466	112,730							
1892	13,930	35,995							
1893	25,945	52,475							
1894	52,639	83,640	900,000	$27,000					
1895	92,142	188,329	1,498,000	46,438					$81,29
1896	238,507	108,619	1,220,000	36,600					40,00
1897	159,840	50,063	564,000	19,176					24,90
1898	137,107	73,503	580,000	21,170	49,829	$3,986			33,00
1899	114,187	57,529	662,000	28,135					24,00
1900	213,655	113,483	971,000	38,840					13,90
1901	162,406	56,573	601,000	24,040	8,566	1,349			24,25
1902	74,397	14,484	257,500	9,013	1,100	126			36,39
1903	66,045	18,200	95,000	3,420	23,450	3,098			26,40
1904	150,474	7,122	124,000	5,270	25,508	3,252			
1905	135,959	29,741	345,680	16,247	151,606	23,649			
1906	19,449	13,358	208,018	11,857	4,145	800			
1907	57,241	44,440	261,140	13,096	6,779	1,356	144,213	$8,598	*
1908	308,873	30,900	683,401	28,244	6,820	938			*
1909	457,486	47,117	2,364,137	131,199	39,888	5,073			*
1910	408,509	129,590	2,866,227	127,385	58,801	7,489			*
1911	574,945	45,678	1,182,122	53,195	27,889	3,486	*		*
1912	369,758	45,316	1,267,593	54,342	48,584	8,016	*		*
1913	237,310	136,854	3,322,308	146,182	113,860	17,648	*7,149,523	449,701	*
1914	275,000	255,000	4,626,934	180,450	336,423	44,744	399,641	20,381	*
1915	317,905	127,894	4,323,639	203,211	154,722	27,076	4,625,162	573,520	*8,162,727
1916	131,722	232,441	11,185,321	771,787	274,032	67,412	5,758,703	771,666	[1]
1917	125,394	534,599	19,318,642	1,661,403	175,273	47,850	3,535,000	359,550	[1]
1918	100,240	441,548	12,223,471	867,866	338,518	83,614	2,517,045	229,051	[1]
1919	69,560	194,151	3,643,485	193,105	169,713	31,567	1,192,353	87,042	[1]
1920	55,634	258,929	4,612,338	368,987	144,286	26,549	[1]		
1921	80,373	86,020	1,052,253	47,351	45,725	5,898			
1922	85,265	256,009	6,264,138	344,528	69,537	9,388	[1]		[1]
1923	36,702	265,023	9,541,868	667,931	77,349	11,370			[1]

* Combined to conceal individual annual output.
[1] See under 'Unapportioned.'
[2] Includes antimony, borax, gypsum, marble, molybdenum, salt, tungsten.
[3] Includes asbestos, barytes, borax, gypsum, marble, molybdenum.
[4] Includes borax, dolomite, marble, pumice, salt, soda, talc, tungsten.
[5] Includes borax, dolomite, fuller's earth, marble, volcanic ash, salt, talc, zinc.
[6] Includes borax, building stone, marble, pumice, soda.
[7] Includes borax, building stone, clay (pottery), fuller's earth, limestone, marble, pumice, soda, talc, zinc.
[8] Includes building stone, borates, fuller's earth, gems, marble, pumice, tungsten concentrates.

INYO COUNTY, 1880-1934

Soda		Soapstone and talc		Marble		Miscellaneous and unapportioned		
Tons	Value	Tons	Value	Cu. ft.	Value	Amount	Value	Substance
1,530	$20,000			12,500	$62,500			
1,900	47,500			10,000	50,000			
3,000	65,000			3,000	24,000			
5,000	110,000							
7,000	154,000			4,000	12,000			
10,000	250,000							
1,000	50,000					20 tons	$700	Antimony.
8,000	400,000							
7,000	50,000							
*	*			20,000	20,000	300 tons	2,400	Salt.
*	*			3,000	3,000	400 tons	800	Salt.
*	*			17,000	17,000			
*	*			1,200	4,800			
*	*			1,000	4,000			
*	*							
*	*						1,417,217	Unapportioned, 1900-1909.
*	*					45,000 tons	31,500	Rubble.
*	*					46,450 tons	32,555	Rubble.
							174	Gems.
*	*	1,050	$5,250				648	Rubble.
*	*	1,000	4,400	3,200	11,500		835	Rubble.
						13,500 tons	54,000	Salt.
*	*	390	2,060	3,500	10,500	13,500 tons	54,000	Salt.
112,937	*496,250	1,513	14,000				80,430	Antimony, dolomite, marble, pumice, salt.
			Total	[1]78,400	$219,300			
				Miscellaneous stone[1], value				
10,593	264,825	685	4,606		23,040	3,596 tons	14,700	Dolomite.
							2,317,897	Other minerals[2].
19,604	$61,160	4,736	41,044		3,000	11,315 tons	22,630	Dolomite.
							2,639,600	Other minerals[3].
[1]		9,635	72,549		5,000	14,390 tons	32,056	Dolomite.
						589 tons	854,025	Tungsten concentrates.
							2,491,727	Borax, limestone, salt, soda.
[1]		[1]			7,850	2,360 tons	12,000	Limestone.
							2,097,271	Other minerals[4].
23,132	933,023	[1]			1,190	15,240 tons	31,080	Limestone.
							2,214,008	Other minerals[5].
[1]		4,350	77,250		16,250	22,112 tons	49,073	Dolomite.
						1,185 tons	8,295	Fuller's earth.
							1,089,708	Other minerals.[6]
[1]		[1]			12,000	43,778 tons	72,284	Dolomite.
							1,358,207	Other minerals.[7]
24,116	662,747	5,981	104,976		19,500	47,542 tons	79,793	Dolomite.
							997,539	Other minerals.[8]

Year	Gold, value	Silver, value	Lead		Copper		Zinc		Borax, value
			Pounds	Value	Pounds	Value	Pounds	Value	
1924	$19,997	$115,799	4,813,718	$385,098	79,995	$10,479			[1]
1925	43,774	117,763	6,307,105	548,196	73,003	10,367	145,000	$11,020	[1]
1926	26,871	77,693	6,541,741	523,339	42,462	5,945	76,889	5,767	[1]
1927	10,109	47,384	2,173,032	136,901	30,010	3,931			[1]
1928	10,781	23,948	1,733,120	100,421	22,250	3,204			[1]
1929	16,889	23,209	1,335,831	84,157	17,733	3,121			[1]
1930	20,466	42,961	3,452,159	172,608	19,607	2,549			[1]
1931	40,603	41,311	3,703,232	137,020	8,542	777			[1]
1932	42,113	24,105	2,204,108	66,123	12,672	798			[1]
1933	62,312	7,332	601,135	22,241	7,940	508	255,944	10,741	[1]
1934	266,109	25,943	530,037	19,611	33,363	2,669	721,719	31,034	[1]
Totals	$6,890,269	$5,731,254	130,100,433	$8,344,093	2,599,980	$480,082	26,511,192	$2,558,071	[1]$8,466,870

[1] See under 'Unapportioned.'
[9] Includes alum, borates, building stone (tuff), fuller's earth, glaubar salt, lime, limestone, magnesium, sulphate, pumice, radio galena crystals, soda (ash and bicarbonate), tungsten concentrates.
[10] Includes borates, building stone (tuff), fuller's earth, graphite, limestone, pumice, soda (ash and bicarbonate), tungsten concentrates.
[11] Includes borates, building stone (tuff), dolomite, gems, limestone, salt, tungsten concentrates.
[12] Includes borates, building stone (tuff), dolomite, fuller's earth, lime.
[13] Includes borates, dolomite, fuller's earth, gems, granite (tuff), salt, tungsten.
[14] Includes borates, dolomite, fuller's earth, gems, granite (tuff), limestone, marble, pumice, salt, tungsten.
[15] Includes barytes, bentonite, borates, dolomite, gems, granite (tuff), lime, marble, mineral water, pumice, salt, silica, talc, tungsten.
[16] Includes barytes, bentonite, borates, dolomite, lime, limestone, pumice, quicksilver, talc, miscellaneousstone.
[17] Includes bentonite, borates, dolomite, feldspar, quicksilver, silica, slate, talc, soda, sulphur.
[18] Includes bentonite, borates, pottery clay, molybdenite, silica, slate, talc, soda, sulphur, tungsten.
[19] Includes bentonitc, borates, dolomite, gems, slate, soda, sulphur, talc.

INYO COUNTY, 1880-1934—Continued

Soda		Soapstone and talc		Miscellaneous stone, value	Miscellaneous and unapportioned		
Tons	Value	Tons	Value		Amount	Value	Substance
[1]	----------	5,942	$98,806	$12,500	17,197 tons	$37,491	Dolomite.
					----------	1,429,925	Other minerals.[9]
[1]	----------	5,335	89,134	----------	----------	1,764,891	Other minerals.[10]
					2,275 tons	20,130	Fuller's earth.
60,473	$1,232,081	6,487	98,563	$12,000	300 tons	1,750	Pumice.
					----------	831,695	Other minerals.[11]
					344 tons	2,496	Pumice.
53,328	1,293,379	7,009	99,416	6,000	----------	920,218	Other minerals.[12]
					163 tons	1,630	Pumice and volcanic ash.
86,664	1,292,165	8,563	121,177	44,831	----------	234,410	Other minerals.[13]
70,440	1,525,060	8,274	120,875	224,625	----------	298,275	Other minerals.[14]
67,119	1,273,098	[1]	----------	310,675	----------	438,409	Other minerals.[15]
56,251	903,511	[1]	----------	[1]	----------	224,486	Other minerals.[16]
[1]	----------	[1]	----------	5,800	431 tons	4,845	Pumice and volcanic ash.
					----------	580,237	Other minerals.[17]
					48,487 tons	164,987	Dolomite.
[1]	----------	[1]	----------	18,690	894 tons	4,150	Pumice and volcanic ash.
					----------	724,346	Other minerals.[18]
					673 tons	5,115	Pumice and volcanic ash.
[1]	----------	[1]	----------	66,081	----------	877,163	Other minerals.[19]
[1]629,107	$11,883,779	[1]70,950	$954,106	$772,782	----------	$25,652,104	

MINERAL PRODUCTION OF KINGS COUNTY, 1894[1]-1934

Year	Brick		Gypsum		Natural gas		Quicksilver		Miscellaneous and unapportioned		
	M	Value	Tons	Value	M cu. ft.	Value	Flasks	Value	Amount	Value	Substance
1894											
1895											
1896											
1897											
1898	1,250	$8,450									
1899	1,650	11,550									
1900	750	5,000									
1901	1,000	5,000								$10,500	Unapportioned 1900-1909.
1902	3,500	19,000									
1903	3,400	24,200									
1904	3,100	23,300									
1905	3,400	24,000					*250	$9,000			
1907	1,000	8,000							100 tons	1,000	Fuller's earth.
1908	3,000	24,000	100	$400					50 tons	1,000	Fuller's earth.
1909	1,000	8,500	100	300	360	$360			100 tons 20 tons	2,000 100	Fuller's earth. Mineral paint.
1910	400	3,200	100	490	1,200	600	100	4,525	100 tons 10 tons	1,000 270	Fuller's earth. Mineral paint.
1911			20	100	1,800	800					
1912			50	200	6,000	1,650					
1913			100	300	1,916	575			20 tons	60	Mineral paint.
1914			20	80	150	500				400	Other minerals.
1915					258	608	[2]		20 tons	160	Fuller's earth.
										18,000	Fuller's earth, quicksilver.
Totals	26,250	$184,200	490	$1,870							
	Petroleum										
	Barrels	Value									
1916					258	608	[2]			26,180	Other minerals.
1917					3,569	2,777					
1918					2,460	590	[2]			8,639	Other minerals.
1919					2,550	1,630	[2]			49,653	Other minerals.
1920					2,765	1,250	436	28,620			
1921					2,090	980	[2]			4,742	Other minerals.
1922					1,790	870				5,936	Other minerals.
1923					1,990	970				585	Other minerals.
1924					1,480	725					
1925					740	440				80	Other minerals.
1926					470	245				475	Other minerals.
1927					[2]					1,599	Natural gas and petroleum.
1928	198,784	$576,474								1,240	Miscellaneous stone.
1929	1,968,729	3,294,688			25,809,765	981,343				105	Unapportioned
1930	6,176,130	9,437,771			47,959,591	3,668,722				350	Unapportioned.
1931	17,607,527	12,735,524			120,253,916	4,636,107				270	Unapportioned.
1932	21,981,835	18,398,796			92,279,724	4,322,190					
1933	21,663,622	20,253,320			104,893,813	5,216,344				4,588	Unapportioned.
										694	Gold.
										3	Silver.
1934	21,393,483	23,104,962			96,939,145	4,957,070				2,560	Miscellaneous stone.
										2,100	Unapportioned.
Totals	90,990,110	$87,801,535			488,167,800	$23,797,954	[2]786	$42,145		$144,388	

*Flasks of 75 pounds, June, 1904-December, 1927 (inc.); of 76 pounds, since.

[1] Kings County was created March 22, 1893, from a part of Tulare County, and in 1909 extended by annexing a portion of Fresno County.

[2] See under 'Unapportioned.'

Year	As	
	Tons	
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		
0		
1		
2		
3		
4	6,9	
5	1,4	
6	2,4	
7	4,6	
8	1,8	
9	2,3	
0	7	
1	3,	
2	10,	
3	8,(	
4	12,4	
5	10,5	
6	23,	
7	20.4	

Year	Asphaltum		Brick		Copper		Fuller's earth		Gold, value	Lime		Limestone		Silver, value	Natural gas		Petroleum		Miscellaneous and unapportioned		
	Tons	Value	M	Value	Pounds	Value	Tons	Value		Barrels	Value	Tons	Value		M cu. ft.	Value	Barrels	Value	Amount	Value	Substance
									$94,214					$390							
									190,000					14,000							
									260,000					20,000							
									150,000					5,000							
									100,000					5,000							
									72,003												
									94,640					1,721							
									72,358					150							
									60,000					2,500							
									242,676					7,517							
									117,341					586							
									107,735					61							
									107,738					73							
									83,665					1,754							
	6,900	$138,000							310,707	33,000	$26,500			39,700			11,215	$39,334	92 tons	$3,720	Antimony.
	1,400	28,000							231,433	25,400	24,080			49,064			116	116	33 tons	1,485	Antimony.
	2,484	44,680							590,867	37,100	32,329	5,000	5,000	34,650			235	235	15 tons	2,250	Antimony.
	4,650	86,350	1,100	$6,600					754,313	53,400	70,370			10,471					25 tons	3,500	Antimony.
																			220 tons	1,100	Coal.
	1,850	50,000	2,000	14,000					1,017,930	42,000	29,900			8,543			10,000	10,000	40 tons	1,200	Antimony.
	2,537	57,670	1,600	11,400			620	$12,400	863,414	64,700	57,690			6,810					27 tons	3,382	Borax.
	701	14,020	2,525	17,300	4,000	$750	500	3,750	805,252	57,721	51,700			147,736			15,000	13,500			
	3,112	43,126	4,600	23,400	429,248	67,606	1,000	19,500	1,007,059	62,000	82,700			40,497			919,275	827,348		859,927	Unapportioned, 1900-1909.
	10,150	101,500	3,500	24,500	235,840	27,122	987	19,246	1,165,982	99,360	80,856			99,135			3,902,125	1,131,616	1,000 lbs.	64	Lead.
	8,006	100,787	9,000	30,000	4,300	559	250	4,750	1,022,353	101,661	76,246			114,614			9,777,948	1,955,585	50 tons	8,350	Antimony.
	12,451	124,110	700	4,900			500	9,500	1,426,523	178,038	172,000			151,189			18,001,148	3,900,230	1,000 tons	8,000	Gypsum.
																	19,908,045	3,431,408	28 tons	63	Bituminous rock.
	10,586	105,860	750	6,000					1,160,971	279,650	255,500		44,000	134,944			17,069,715	3,474,966	1,000 tons	8,000	Gypsum.
																			53 tons	54	Clay.
	23,136	231,360	4,275	34,200					806,117	295,613	267,096			129,503			13,826,000	3,765,200	1,350 tons	11,000	Gypsum.
	20,443	260,158	2,168	18,428					878,798	175,000	169,822			86,033			15,700,308	4,673,867	52 tons	18,800	Tungsten.
	50,000	475,000	2,080	19,552					827,087	116,717	87,788			96,550			18,777,871	9,388,935	215 tons	752	Clay.
																				183,600	Tungsten.
	54,599	655,391	3,365	29,634			359	5,385	654,799	115,709	88,869			101,633	38,000	$2,714	24,549,758	12,565,246	1,000 tons	1,000	Gypsum.
																			500 tons	2,000	Gypsum.
																				500	Gems.
	76,605	811,846	8,332	63,711					619,974	99,187	86,198		4,331	35,041	975,724	47,364	40,641,159	17,825,212	1,700 tons	8,300	Gypsum.
																			1,675 tons	4,781 lbs.	Lead.
																			160,000 tons	8,305	Gypsum.
																			242 tons	112,000	Rubble.
			5,603	41,426	29,441	3,680			557,471	96,500	82,025	600	400	5,833	1,654,380	165,438	46,562,825	20,207,906	230,950 tons	121	Clay.
																			853 tons	107,880	Crushed rock.
																			2,417 lbs.	4,245	Gypsum.
			1,890	23,120					830,421	162,831	124,894			11,480	4,400,000	325,484	51,448,067	21,762,532	8,479 tons	109	Lead.
																			19,664 lbs.	18,188	Gypsum.
																				885	Lead.
						Total	$4,216	$74,531													
			1,625	22,000	3,498	542	Miscellaneous stone,[1] value		649,712	135,000	91,200			11,851	7,111,237	568,899	58,698,432	27,038,474	208 tons	104	Clay.
																			10,000 tons	22,750	Gypsum.
																			1,376 lbs.	61	Lead.
																				600	Other minerals.
																			346 tons	172	Clay.
			3,834	29,214	7,394	983			594,337	81,600	65,100			8,002	6,508,868	390,532	65,332,633	26,721,046	82 tons	320	Gypsum.
																			379 lbs.	15	Lead.
																			20,000 tons	50,000	Salt.
																				180,575	Other minerals.
																			267 tons	11,301	Antimony ore.
					1,047	183		$59,319	983,319	55,176	39,523	1,425	1,710	13,316	12,163,461	737,638	54,810,669	23,184,913	84,371 lbs.	3,965	Lead.
																				299,997	Cement, pottery clay, fuller's earth, gypsum, magnesite, salt, tungsten.
																			145 tons	5,880	Antimony ore.
																			24,274 lbs.	1,675	Lead.
			3,177	23,824	24,754	6,089		63,723	747,042	(1)				8,745	16,679,658	1,379,033	54,120,509	34,091,246		30,047	Lime and limestone.
																			4,100 tons	23,700	Silica.
																			193 tons	482,387	Tungsten concentrates.
																				363,516	Cement, clay, feldspar, fuller's earth, magnesite, quicksilver, salt.
																			113 tons	16,041	Antimony ore.
			and tile	22,785	251,225	68,584		31,787	537,852	(1)		(1)		7,813	25,819,376	1,445,880	53,065,066	47,387,104	9,684 lbs.	933	Lead.
																			300 flasks	27,250	Quicksilver.
																			49 tons	58,148	Tungsten concentrates.
			1,678	16,380	95,580	23,608		311	246,127	23,915	23,615	(1)		7,817	23,545,128	1,507,912	49,049,917	61,410,496		139,345	Clay, feldspar, lime, limestone, magnesite, salt.
																				174,419	Lead, limestone, magnesite, manganese, quicksilver, salt, tungsten.
			1,709	175,112				28,320	150,589	86,952	112,724	(1)		8,402	25,363,739	1,618,913	47,734,035	64,440,047			
																			17,000 tons	81,000	Salt.
																				9,345	Fuller's earth, limestone, quicksilver.
			3,850	56,550	206	38		31,180	61,187	76,395	106,733			8,385	34,912,865	1,810,147	50,660,438	86,831,991	22,000 tons	87,000	Salt.
																			3,060 tons	20,100	Silica.
																				108,270	Cement, gems, lead, quicksilver.
			5,840	85,820				38,208	84,098	72,629	141,491			1,897	40,136,930	1,926,797	57,434,945	97,639,407	18,500 tons	93,500	Salt.
																				829,115	Cement, gypsum, limestone, silica.
			5,082	66,652				35,585	124,337					6,524	47,644,633	2,282,100	53,512,157	64,803,222	18,000 tons	66,000	Salt.
																				1,166,582	Cement, copper, lime, silica, lead.
			5,271	68,375				9,225	107,051	17,985	214,183	(1)		33,151	42,421,592	2,051,656	45,952,794	37,629,300	18,921 tons	97,336	Salt.
																				1,602,138	Cement, clay (pottery), gypsum, limestone, pumice, sulphur.
																			10,506 tons	44,115	Salt.
			(1)	23,058				5,244	154,132	8,130	96,880			35,902	47,881,308	2,522,551	61,175,405	69,572,934		23,058	Brick and clay (pottery).
																				1,709,635	Arsenic, cement, copper, lead, pumice, sulphur.
			(1)					3,000	135,545					7,455	45,649,845	2,290,608	58,852,742	84,255,094	6,890 tons	28,858	Salt.
																				2,680,166	Antimony, borates, cement, brick, clay (pottery).
																			11,279 tons	41,116	Salt.
			4,591	55,140				28,000	135,508	(1)				4,667	44,182,140	2,158,867	54,549,046	78,987,887		2,144,889	Cement, feldspar, fuller's earth, gypsum, lime, pumice, silica.
																			14,960 tons	69,839	Salt.
			4 835	50,438				79,510	171,100	(1)				8,932	39,401,478	2,057,807	51,570,412	58,738,699		3,553,163	Borates, cement, clay (oil well mud), copper, feldspar, gypsum, lime, onyx, pumice.
			2,126	30,791				78,663	186,453	(1)				5,245	35,107,062	1,916,797	44,096,638	36,803,054		4,043,778	Antimony, borates, cement, clay (pottery), feldspar, fuller's earth, gypsum, lime, pumice, salt.
																					Clay (pottery).
			3,503	44,081				361,896	148,421					2,312	34,409,095	1,861,950	43,577,420	32,299,584	58,551 tons	85,845	
																				4,004,550	Borates, cement, fuller's earth, volcanic ash, quicksilver, salt, tungsten.
																			111,301 tons	2,335,190	Borax.
																			371,123 tons	117,834	Clay.
			(1)		(1)			450,351	165,435					1,757	27,908,423	1,290,090	44,170,810	37,015,139		1,612,181	Brick, cement, copper, feldspar, fuller's earth, gems (rose quartz), gypsum, lead, quicksilver, salt, volcanic ash.
																			27,499 tons	46,668	Clay (pottery and oil well drilling).
																			6,307 lbs.	233	Lead.
			(1)		207	19		108,958	202,108					2,534	26,977,942	1,444,732	35,794,138	22,765,072		4,212,034	Bentonite, borates, brick, cement, feldspar, gypsum, mineral water, volcanic ash, quicksilver, salt.
																			14,770 tons	22,871	Clay (pottery and oil well drilling).
			(1)		(1)			49,077	296,250	(1)		(1)		3,957	26,234,262	1,201,293	35,552,561	23,393,585		3,102,892	Bentonite, borates, brick, cement, copper, lead, volcanic ash, salt.
			(1)		760	49		70,931	424,376					70,931	20,571,398	916,090	35,349,272	23,521,406		2,931,110	Bentonite, borates, brick, cement, clay (pottery), gems, lead, volcanic ash, quicksilver, salt, wollastonite.
																			19,526 tons	30,142	Clay (pottery).
																			11,008 lbs.	407	Lead.
			(1)		5,502	440		131,743	1,021,849					73,468	21,309,723	1,017,661	41,823,494	30,475,225		4,302,252	Bentonite, borates, brick, cement, gems, volcanic ash, quicksilver, salt, tungsten ore, wollastonite.
Totals	286,610	$3,327,858	100,555	$1,015,933	1,093,002	$200,252		$1,059,031	$24,911,209	2,053,042	$2,758,912	7,025	$65,441	$1,090,241	659,008,267	$34,938,953	1,377,704,943	$1,174,009,061		$45,585,767	

[1] See under "Unapportioned."
[2] Includes crushed rock, rubble, rip-rap, sand, gravel.

MINERAL PRODUCTION OF LAKE COUNTY, 1873-1934

Year	Quicksilver		Mineral water		Chromite		Miscellaneous stone,[1] value	Miscellaneous and unapportioned		
	Flasks	Value	Gallons	Value	Tons	Value		Amount	Value	Substance
1873	880	$70,790								
1874	1,695	178,280								
1875	8,821	743,287								
1876	14,199	624,756								
1877	18,100	675,130								
1878	14,428	474,681								
1879	15,582	309,303								
1880	17,148	531,588								
1881	17,393	518,833								
1882	10,193	287,748								
1883	6,481	186,329								
1884	4,182	127,551								
1885	4,765	146,524								
1886	3,498	124,179								
1887	4,307	182,509								
1888	6,636	282,030	*	*						
1889	4,713	212,085	*	*						
1890	4,232	222,180	*	*						
1891	4,975	225,119	*	*						
1892	11,140	453,509	*	*						
1893	9,731	357,614	*	*						
1894	12,471	382,954	*	*						
1895	12,856	465,074	87,500	$42,000						
1896	6,307	232,484	65,920	32,460						
1897	3,585	134,546	511,950	76,585						
1898	1,729	64,746	523,000	37,350						
1899	2,954	128,179	166,020	75,924						
1900	3,165	127,345	758,600	45,400						
1901	4,395	211,324	201,706	120,360						
1902	3,611	161,568	241,100	126,663						
1903	2,595	106,397	381,040	187,621						
1904	[2]2,854	109,719	659,000	221,000						
1905	1,462	51,937	489,000	219,500						
1906	1,066	38,909	365,000	160,000						
1907	802	30,604	304,340	130,936						
1908	1,300	54,951	246,545	118,300			$10,000			
1909	1,075	56,277	265,000	108,270					$28,423	Unapportioned, 1900-1909.
1910	1,048	47,422	212,546	95,005						
1911	899	41,363	227,440	58,933						
1912	209	8,786	202,000	114,500						
1913	395	15,891	209,750	109,938						
1914	331	16,236	254,150	47,267						
1915	492	41,660	165,130	24,371			5,000		1,503	Copper, gold, silver.
1916	1,139	106,496	195,650	54,160	871	$15,070	4,500		770	Other minerals.
1917	1,067	107,071	129,157	22,685	1,466	36,326	2,500	85 tons	1,900	Manganese.
									70	Other minerals.
1918	1,540	172,173	87,067	15,006	476	24,790	1,000		2,907	Manganese and natural gas.
1919	229	20,604	62,839	17,471	[3]		1,200		100	Other minerals.
1920	385	24,314	43,693	16,413	84	1,560	13,200	247 tons	7,816	Manganese.
									250	Other minerals.
1921	22	880	54,715	26,751			146,508		250	Other minerals.
1922	38	2,000	60,420	29,370			16,669		250	Other minerals.
1923	17	1,050	63,730	44,738			55,000		250	Other minerals.
1924	[3]		66,420	59,423			22,833		14,140	Natural gas and quicksilver.
1925			62,970	57,793			15,300		255	Copper and natural gas.
1926	86	7,778	57,000	58,235			[3]		9,680	Natural gas and miscellaneous stone.
1927	245	29,234	45,643	51,149			4,445	440 M cu. ft.	220	Natural gas.
1928	1,206	145,718	123,500	22,750			19,395	1,000 M cu. ft.	500	Natural gas.
									740	Other minerals.
1929	1,697	203,247	30,956	22,100			154,200		8,153	Gems, natural gas.

MINERAL PRODUCTION OF LAKE COUNTY, 1873-1934

Year	Quicksilver		Mineral water		Chromite		Miscellaneous stone,[1] value	Miscellaneous and unapportioned		
	Flasks	Value	Gallons	Value	Tons	Value		Amount	Value	Substance
1873	880	$70,790								
1874	1,695	178,280								
1875	8,821	743,287								
1876	14,199	624,756								
1877	18,100	675,130								
1878	14,428	474,681								
1879	15,582	309,303								
1880	17,148	531,588								
1881	17,393	518,833								
1882	10,193	287,748								
1883	6,481	186,329								
1884	4,182	127,551								
1885	4,765	146,524								
1886	3,498	124,179								
1887	4,307	182,509								
1888	6,636	282,030	*	*						
1889	4,713	212,085	*	*						
1890	4,232	222,180	*	*						
1891	4,975	225,119	*	*						
1892	11,140	453,509	*	*						
1893	9,731	357,614	*	*						
1894	12,471	382,954	*	*						
1895	12,856	465,074	87,500	$42,000						
1896	6,307	232,484	65,920	32,460						
1897	3,585	134,546	511,950	76,585						
1898	1,729	64,746	523,000	37,350						
1899	2,954	128,179	166,020	75,924						
1900	3,165	127,345	758,600	45,400						
1901	4,395	211,324	201,706	120,360						
1902	3,611	161,568	241,100	126,663						
1903	2,595	106,397	381,040	187,621						
1904	[2]2,854	109,719	659,000	221,000						
1905	1,462	51,937	489,000	219,500						
1906	1,066	38,909	365,000	160,000						
1907	802	30,604	304,340	130,936						
1908	1,300	54,951	246,545	118,300			$10,000			
1909	1,075	56,277	265,000	108,270					$28,423	Unapportioned, 1900-1909.
1910	1,048	47,422	212,546	95,005						
1911	899	41,363	227,440	58,933						
1912	209	8,786	202,000	114,500						
1913	395	15,891	209,750	109,938						
1914	331	16,236	254,150	47,267						
1915	492	41,660	165,130	24,371			5,000		1,503	Copper, gold, silver.
1916	1,139	106,496	195,650	54,160	871	$15,070	4,500		770	Other minerals.
1917	1,067	107,071	129,157	22,685	1,466	36,326	2,500	85 tons	1,900	Manganese.
									70	Other minerals.
1918	1,540	172,173	87,067	15,006	476	24,790	1,000		2,907	Manganese and natural gas.
1919	229	20,604	62,839	17,471	[3]		1,200		100	Other minerals.
1920	385	24,314	43,693	16,413	84	1,560	13,200	247 tons	7,816	Manganese.
									250	Other minerals.
1921	22	880	54,715	26,751			146,508		250	Other minerals.
1922	38	2,000	60,420	29,370			16,669		250	Other minerals.
1923	17	1,050	63,730	44,738			55,000		250	Other minerals.
1924	[3]		66,420	59,423			22,833		14,140	Natural gas and quicksilver.
1925			62,970	57,793			15,300		255	Copper and natural gas.
1926	86	7,778	57,000	58,235			[3]		9,680	Natural gas and miscellaneous stone.
1927	245	29,234	45,643	51,149			4,445	440 M cu. ft.	220	Natural gas.
1928	1,206	145,718	123,500	22,750			19,395	1,000 M cu. ft.	500	Natural gas.
									740	Other minerals.
1929	1,697	203,247	30,956	22,100			154,200		8,153	Gems, natural gas.

MINERAL PRODUCTION OF LAKE COUNTY, 1873-1934—Continued

Year	Quicksilver		Mineral water		Chromite		Miscellaneous stone[1], value	Miscellaneous and unapportioned		
	Flasks	Value	Gallons	Value	Tons	Value		Amount	Value	Substance
1930	1,760	$195,710	36,758	$14,524	.....	.....	$58,059	.....	$71	Other minera
1931	3,046	251,879	24,916	14,034	.....	.....	14,785	.....	70	Other minera
1932	1,038	57,850	18,870	6,050	.....	.....	33,164	.....	20	Other minera
1933	1,610	90,592	11,799	11,177	.....	.....	32,052	.....	30	Other minera
1934	3,497	221,837	11,372	11,005	.....	.....	27,426	.....	213	Other minera
Totals	267,322	$11,100,830	7,724,212	$2,707,217	[3]2,897	$77,746	$637,236	.....	$78,581	

* Bartlett Springs since 1888 and Witter Springs since 1899 reported to U. S. Geological Survey, but no segregated figu available for Lake County previous to 1895.

[1] Includes crushed rock, rubble, rip-rap, sand, gravel.

[2] Flasks of 76½ pounds previous to June, 1904; of 75 pounds thence, through 1927; of 76 pounds since January, 1928.

[3] See under 'Unapportioned.'

In addition to the above, Lake County has produced the following:

Borax	Sulphur	Pounds	Value
1864 to 1868 Borax Lake yielded 590 tons refined borax, worth $414,636; 1872 from Lake Hachinhama, 140 tons, worth $89,600; total 730 tons, worth $504,236.	1865	214,650	$8,(
	1866	675,963	21,(
	1867	487,603	13,(
	1868	503,481	10,(
	Totals	1,881,697	$53,(

MINERAL PRODUCTION OF LOS ANGELES COUNTY, 1860-1934

Year	Gold, value	Silver, value	Petroleum		Asphalt (tons)	Natural gas (M cu. ft.)	Gypsum		Salt		Gems, value	Mineral water		Brick		Pottery clay		Sandstone and serpentine		Miscellaneous stone,[1] value	Miscellaneous and unapportioned.		
			Barrels	Value	Amount	Value	Tons	Value	Tons	Value		Gallons	Value	M	Value	Tons	Value	Cubic feet	Value		Amount	Value	Substance
1860	$7,700	$66,300	*																				
1861	13,000	39,000																					
1862	17,000	24,000																					
1863	20,000	25,000																					
1864	40,000	11,000																					
1865	22,500	1,945																					
1866	21,500	6,750																					
1867	25,000	25,000																					
1868	20,000	10,000																					
1869	38,203	97																					
1870	74,320	7,266																					
1871	40,759																						
1872	219,204																						
1873	14,200																						
1894	34,500		475,650	$617,065			1,134	$11,340						7,500	$37,500					$5,500	9,500 bbls.	$10,800	Lime.
1895	33,330		979,695	732,817			3,790	37,820						43,800	235,000					47,500			
1896	35,468		953,734	812,800			960	9,180						27,478	179,290			[2]1,500	$6,000	30,000			
1897	40,698		1,327,011	1,327,011			1,900	17,250						30,868	228,290			[2]2,500	2,500	30,625	5 tons	200	Infusorial earth.
1898	21,300		1,462,871	1,462,871			2,500	18,500						25,908	188,386	50	$500	10,500	5,250	32,500	2 tons	50	Sulphur.
1899	13,132		1,409,356	1,409,356	[3]1,151	$23,020	3,563	14,250				193,500	$5,805	23,385	147,400			750	3,000	112,001	1,600 cu. ft.	2,000	Marble.
1900	5,508		1,722,887	1,722,887	[3]5,000	100,000	2,500	10,000						55,725	275,925	4,576	10,776	[2]6,000	3,000	24,352			
1901	10,312		2,304,432	1,082,038	[3]10,000	[3]1,500 152,838	3,500	35,500	6,650	$19,950				44,435	264,825	130	390	[2]7,500 [2]350	3,750 2,000	94,229	10 tons	19	Soapstone.
1902	7,209		2,198,496	1,075,868	[3]16,767	171,904			93	180				52,776	335,670	890	890			103,047	100 tons	300	Mineral paint.
																					14,400 lbs.	504	Lead.
1903	8,674	32	1,960,604	1,294,866	[3]28,308	332,600	5,914	38,441	8,000	20,000		95,000	5,500	79,195	705,334	115	115	[2]2,163	9,734	118,185	60 tons	360	Infusorial earth.
																					1,750 tons	2,558	Glass sand.
1904	12,402	73	2,190,000	1,289,910	[3]30,425	307,088			7,560	24,480		125,750	7,084	128,719	767,827	5,000	5,000	[2]29,211	13,145	83,826	219 tons	10,124	Soapstone.
																		[2]200	2,310		10,000 bbls.	10,000	Lime.
1905	15,035	100	2,854,564	1,056,188	[3]23,718	119,430	11,500	43,500	12,000	20,000		175,000	31,250	109,563	853,810	30,533	16,066	[2]8,784	9,950	69,021	709 tons	4,254	Glass sand.
																		[2]19,080	9,540		228 tons	2,315	Soapstone.
1906			2,814,000	908,800	[3]25,920	259,200	21,000	69,000	12,000	36,000		85,465	5,128	127,955	826,831	41,350	34,350	[2]847	1,694	176,558	18,000 bbls.	18,000	Lime.
																					50 tons	200	Infusorial earth.
1907			4,318,739	2,633,541	[3]26,610	353,423	7,500	50,000	12,000	36,000		385,000	35,100	101,079	895,272	17,500	20,500	[2]21,196	19,076	30,904	849 lbs.	169	Copper.
																					1,000 cu. ft.	3,000	Marble.
1908			6,244,347	4,082,052	[3]25,000	250,000	12,000	75,000	12,000	48,000	$8,500	573,975	42,857	108,414	803,163	25,934	55,274	[2]1,000	3,000	598,618	25,000 bbls.	25,000	Lime.
																		[2]6,292	2,000		200 tons	8,000	Glass sand.
1909	864	2	5,409,392	3,513,102	[3]40,740	516,500	10,000	50,000	10,000	30,000	9,500	266,315	19,988	136,202	1,195,892	14,027	26,688			182,377	1,800 tons	14,400	Glass sand.
																					2,000 cu. ft.	6,000	Marble.
																						842,530	Unapportioned, 1910-1909.
1910			5,127,266	3,185,433	[3]45,872 [3]30,920	591,193 15,206			6,000	12,000	4,900	319,491	23,999	148,723	1,361,653	450	800			324,091	40 tons	320	Infusorial earth.
																					60 tons	720	Feldspar.
																					80 tons	200	Glass sand.
1911	[4]		4,924,288	3,313,972		[3]15,208			7,592	16,113	5,000	229,019	17,256	160,259	1,442,913	15,650	41,025			553,076	1,600 cu. ft.	4,800	Marble.
1912	[4]		4,484,590	2,798,384		[3]78,672			10,360	46,370	3,000	76,495	6,333	174,862	1,692,258	11,929	12,028			955,668	1,100 cu. ft.	3,300	Marble.
																					1,800 tons	1,800	Glass sand.
1913	2,322	27	4,143,690	2,672,680	[3]1,287,794	77,578			10,000	40,000	2,500	255,095	15,140	204,912	1,752,106	7,425	20,135			1,038,810	1,800 tons	2,000	Glass sand.
																						240,000	Other minerals.
1914			3,558,690	1,957,279	[3]1,250,000	75,000			20,000	60,000	2,100	331,151	8,625	133,557	1,244,971	8,263	14,566			953,434	13,203 tons	349,669	Borax.
																					10 tons	460	Potash.
1915			2,931,098	1,843,661	[3]1,729,035	120,783					700	350,171	29,491	88,669	820,312	6,507	1,511			1,022,134		330,920	Barite, borax, potash.
1916			2,875,468	1,871,930	[3]2,083,664	139,522			[5]		600	320,700	8,552	82,005	760,912	6,233	10,549			971,153	1,864 tons	324,769	Potash.
																					642 tons	1,684	Silica.
																						373,374	Borax, copper, graphite, salt.
1917			4,669,583	5,491,430	[3]1,670,476	194,793			[5]		300	188,368	16,902	and tile	939,081	6,276	10,321	[5]		608,026	1,710 tons	400,902	Potash.
																						542,768	Borax, graphite, magnesium, chloride, salt, silica, serpentine, talc.
																					18,630 tons	121,903	Building tile.
1918			10,125,190	13,567,755	[3]2,088,959	224,279			[5]		[5]	110,481	15,540	43,381	608,676	12,634	11,820	[5]		547,190	2,380 tons	462,600	Potash.
																						386,865	Borax, gems, graphite, magnesium, chloride, manganese, salt, serpentine.
1919			15,076,633	20,805,754	[3]4,148,476	458,812			[5]		[5]	125,400	8,787	and tile	1,185,154	11,329	33,343			715,524		399,007	Borax, gems, graphite, magnesium salts, manganese, salt.
1920		[6]	14,026,536	21,488,653	[3]5,225,835	556,465			6,502	6,577		161,466	10,371	127,854	2,333,941	18,684	91,763			1,704,951	27,954 tons	308,476	Building tile.
																						473,966	Borax, copper, gold, graphite, infusorial earth, lead, magnesium salts, silver.
1921		[6]	12,393,605	25,795,254	[3]5,944,277	638,936			[5]		[5]	254,468	13,314	and tile	3,208,448	29,055	62,866			1,763,180		222,943	Borax, gems, gold, graphite, limestone, magnesium, chloride, salt, silver.
1922		[4]	37,726,367	52,930,093	[3]23,254,549	1,653,571			[5]			300,400	15,450	240,424	4,190,485	54,924	66,519			3,390,477	39,095 tons	397,136	Building tile.
																					12,000 tons	35,168	Limestone.
																						72,772	Borates, gold, graphite, magnesium salts, salt, silver.
																						40,000	Building stone.
1923	714	6	158,665,019	154,063,733	[3]134,799,452	8,760,961			[5]			440,563	24,787	310,897	5,307,968	128,825	59,272			5,408,808	53,199 tons	522,890	Building tile.
																					2,717 tons	8,779	Limestone marl.
																						169,541	Borates, diatomaceous earth, magnesium chloride, salt, silica, soapstone.
																					46,941 tons	454,728	Building tile (hollow).
1924	751	5,515	119,027,428	147,474,953	[3]122,838,521	9,191,395			[5]			1,889,285	88,942	301,957	5,030,259	84,065	132,855			5,923,329		117,982	Copper, building stone (tuff), diatomaceous earth, lead, limestone, magnesium chloride, salt.
																					44,345 tons	426,178	Building tile (hollow).
1925	409	15,444	121,214,551	173,215,593	[3]98,226,700	8,704,894			[5]			3,811,270	333,038	196,955	3,300,748	217,707	108,817			6,978,905		95,274	Copper, lead, limestone, magnesium chloride, salt, sandstone, zinc.
																					21,471 tons	192,408	Building tile (hollow).
1926	94	42,058	105,826,337	174,084,324	[3]91,054,793	8,965,307			[5]			4,026,465	209,459	238,326	2,954,067	86,767	99,076			7,472,884	1,104,507 lbs.	88,361	Lead.
																					2,564,188 lbs.	192,314	Zinc.
																						66,974	Building stone (tuff), limestone (marl), salt.
1927	2,345	14,819	103,625,615	114,583,011	[3]59,749,559	7,117,081			[5]			3,934,525	260,198	214,332	2,714,398	147,621	206,175			6,202,078	28,950 tons	288,471	Building tile (hollow).
																					342,945 lbs.	19,697	Lead.
																						334,168	Copper, graphite, diatomaceous earth, limestone, magnesite, salt, titanium, zinc.
1928	2,187	20	120,549,303	126,700,373	[3]110,432,906	9,058,485			[5]			10,929,535	538,110	148,392	2,191,943	99,781	55,539	[5]		5,622,815	29,392 tons	577,397	Hollow building tile.
																					9,350 cu. ft.	3,240	Granite.
																						76,879	Diatomite, lead, limestone, salt, sandstone, titanium.
1929	991	34	182,444,261	261,871,493	[3]228,708,726	17,410,493			[5]			12,525,565	1,076,504	199,260	2,473,675	88,066	49,304		20,940	5,335,300	18,698 tons	281,695	Hollow building tile.
																					1,981 lbs.	349	Copper.
																						47,497	Granite, limestone, marble, soapstone salt.
1930			114,533,366	148,549,776	[3]156,470,411	14,065,968			[5]			23,695,673	2,152,928	172,468	1,677,406	78,643	70,693		22,292	4,731,302	28,783 tons	198,478	Hollow building tile.
																						147,486	Diatomite, granite, lead, salt, soapstone, paving blocks.
1931	1,292	64	85,382,013	66,999,266	[3]117,606,814	6,489,448			[5]			11,618,905	620,851	85,593	907,350	37,972	25,359		1,780	3,010,537	11,537 tons	95,357	Hollow building tile.
																					2,245 lbs.	83	Lead.
																						1,318,510	Bentonite, cement, diatomite, granite, iodine, salt.
1932	6,691	13	78,361,176	67,390,611	[3]83,899,705	5,379,497			[5]			8,011,766	938,652	58,099	747,301	38,452	21,978	[5]		1,900,053	6,937 tons	54,740	Hollow building tile.
																						191,379	Diatomite, lead, graphite, salt, sandstone.
																					3,410 tons	19,832	Hollow building tile.
1933	15,861	118	67,299,626	60,023,645	[3]70,490,726	4,957,928			[5]			6,672,359	335,310	40,100	639,854	14,195	10,142		8,725	1,841,946	808 lbs.	52	Copper.
																					2,006 lbs.	74	Lead.
																						931,507	Diatomite, dolomite, graphite, iodine, salt, soapstone.
1934	57,924	535	90,297,000	59,711,578	[3]58,220,382	3,421,320			[5]			8,202,017	479,710	30,739	685,611	13,763	7,772		8,250	1,220,639	3,478 tons	24,960	Hollow building tile.
																					517 lbs.	41	Copper.
																					355,279 lbs.	423,016	Iodine.
																					4,008 lbs.	148	Lead.
																						317,723	Unapportioned.
Totals	$893,399	$295,802	1,477,916,477	$1,737,400,896		$110,950,280	87,761	$479,781	[3]140,754	$406,670	[3]445,200	96,058,328	$7,394,361		$58,169,815	1,355,321	$1,392,677	[5]	$161,026	$72,093,508		$14,147,013	

* Commercial production of petroleum in Los Angeles began at least as early as 1874, in the Newhall district, but detailed county segregations are not available for the early years.

[1] Includes granite, crushed rock, rubble, paving blocks, sand, gravel.
[2] Asphalt, tons.
[3] Natural gas, thousand cubic feet.
[4] Included in Riverside County production.
[5] Included in Monterey County production.
[6] Sandstone.
[7] Serpentine.
[8] See under 'Unapportioned.'

MINERAL PRODUCTION OF LASSEN COUNTY, 1880-1934

Year	Gold, value	Silver, value	Miscellaneous stone, value	Miscellaneous and unapportioned		
				Amount	Value	Substance
1880	$25,900					
1881	71,000	$1,000				
1882	100,000	20,000				
1883	20,000	5,000				
1884	[1]119,060	341				
1885	15,000	150				
1886	25,812	135				
1887	24,108	304				
1888	50,000	200				
1889	97,503	215				
1890	14,890	300				
1891	3,676					
1892	15,400					
1893						
1894	35,283					
1895	25,000					
1896	40,300					
1897	49,100	850				
1898	37,460	300				
1899	28,898					
1900	19,807	676				
1901	5,900	200				
1902	23,410	244				
1903	91,102	1,203				
1904	116,993	1,515				
1905						
1906	[2]	[2]				
1907	[2]	[2]				
1908	7,284	783				
1909	[2]116,327	[3]1,463			$217,521	Unapportioned, 1900-1909
1910	[4]82,180	[4]972				
1911	[2]	[2]			[4]1,522	Gold and silver.
1912						
1913		2	$2,030			[5]
1914	1,250	4	775			[5]
1915			870			
1916			9,725			
1917			376			
1918			800			
1919			1,100			
1920			7,313		5,000	Other minerals.
1921	39,943	1,234	42,308			
1922	[2]	[2]	9,540		17,877	Brick, gold and silver.
1923	[2]	[2]	7,600		240	Gold and silver.
1924	2,250	44	35,614			
1925	1,130	24	1,250			
1926	67	1	18,995			
1927	531	9	47,885		1,000	Granite curbing.
1928	492	8	73,399	1,550 cu. ft.	2,600	Granite.
1929	168	2	88,328		200	Other minerals.
1930	2,946	23	14,600		525	Other minerals.
1931	241	2			1,600	Other minerals.
1932	460	3	109,105			
1933	8,309	68	35,228		2,094	Copper, granite, lead.
1934	14,689	278	[2]	304 lbs.	24	Copper.
					13,327	Other minerals.
Totals	$1,334,869	$37,553	[2]$506,841		$263,530	

[1] Lawver, A. M. in 'Production of Precious Metals in U. S.': Report of Director of Mint, 1884, p. 175, 1885.
[2] See under 'Unapportioned.'
[3] Includes Modoc and Colusa Counties' production.
[4] Includes Colusa County production.
[5] Copper production erroneously reported from Lassen County in the years 1913 and 1914, on account of shipping point being Doyle, while producing copper mines were located in Plumas County.

MINERAL PRODUCTION OF LASSEN COUNTY, 1880-1934

Year	Gold, value	Silver, value	Miscellaneous stone, value	Miscellaneous and unapportioned		
				Amount	Value	Substance
1880	$25,900					
1881	71,000	$1,000				
1882	100,000	20,000				
1883	20,000	5,000				
1884	[1]119,060	341				
1885	15,000	150				
1886	25,812	135				
1887	24,108	304				
1888	50,000	200				
1889	97,503	215				
1890	14,890	300				
1891	3,676					
1892	15,400					
1893						
1894	35,283					
1895	25,000					
1896	40,300					
1897	49,100	850				
1898	37,460	300				
1899	28,898					
1900	19,807	676				
1901	5,900	200				
1902	23,410	244				
1903	91,102	1,203				
1904	116,993	1,515				
1905						
1906	[2]	[2]				
1907	[2]	[2]				
1908	7,284	783				
1909	[3]116,327	[3]1,463			$217,521	Unapportioned, 1900-1909
1910	[4]82,180	[4]972				
1911	[2]	[2]			[4]1,522	Gold and silver.
1912						
1913		2	$2,030			[5]
1914	1,250	4	775			[5]
1915			870			
1916			9,725			
1917			376			
1918			800			
1919			1,100			
1920			7,313		5,000	Other minerals.
1921	39,943	1,234	42,308			
1922	[2]	[2]	9,540		17,877	Brick, gold and silver.
1923	[2]	[2]	7,600		240	Gold and silver.
1924	2,250	44	35,614			
1925	1,130	24	1,250			
1926	67	1	18,995			
1927	531	9	47,885		1,000	Granite curbing.
1928	492	8	73,399	1,550 cu. ft.	2,600	Granite.
1929	168	2	88,328		200	Other minerals.
1930	2,946	23	14,600		525	Other minerals.
1931	241	2			1,600	Other minerals.
1932	460	3	109,105			
1933	8,309	68	35,228		2,094	Copper, granite, lead.
1934	14,689	278	[2]	304 lbs.	24	Copper.
					13,327	Other minerals.
Totals	$1,334,869	$37,553	[2]$506,841		$263,530	

[1] Lawver, A. M. in 'Production of Precious Metals in U. S.': Report of Director of Mint, 1884, p. 175, 1885.
[2] See under 'Unapportioned.'
[3] Includes Modoc and Colusa Counties' production.
[4] Includes Colusa County production.
[5] Copper production erroneously reported from Lassen County in the years 1913 and 1914, on account of shipping point being Doyle, while producing copper mines were located in Plumas County.

Year	Gold, value	Silver, value	Copper		Brick	
			Pounds	Value	M	Value
1893	[1]$150,696	$314				
1894	107,791	180				
1895	162,323					
1896	104,339	1,240				
1897	85,963					
1898	94,884	50			400	$2,800
1899	73,758	292			439	3,070
1900	104,134	3,833	500,000	$77,500	500	3,000
1901	82,749	2,600	108,430	17,077	500	3,000
1902	35,128	3	18,600	2,139	230	1,840
1903	93,070	3	36,000	4,680	216	972
1904	75,303	25	10,300	1,313	750	3,750
1905	50,867	10,014				
1906	22,390	508				
1907	13,303	506	1,895	379	1,250	12,500
1908	45,107	1,264	113,293	15,454	250	2,250
1909	14,716	403	5,000	635		
1910	10,076	850	336,667	42,876	740	3,700
1911	1,958	77	14,608	1,826	270	1,350
1912	9,162	1,162	248,129	40,941	300	1,500
1913	14,489	1,617	532,403	82,522	315	1,650
1914	4,506	36	35,359	4,703		
1915	11,214	2,126	40,294	7,051	200	1,400
1916	10,306	1,772	124,286	30,574		
1917	18,914	489	372,123	101,590		
1918	7,583	4,206	245,519	60,643		
1919	17,705	1,700	175,405	32,625		
1920	6,382	1,488	89,846	16,532		
1921	1,053	27				
1922	1,594	3,500				
1923	12,074	541				
1924	3,208	176	34,467	4,515		
1925	2,366	82				
1926	1,708	22				
1927	4,181	38				
1928	3,580	144	14,171	2,031		
1929	1,474	475	19,254	3,389		
1930	1,062	70	98	13		
1931	2,405	11				
1932	9,230	52				
1933	8,962	712	496	32		
1934	13,165	69				
Totals	$1,494,878	$43,677	3,076,643	$551,040	6,360	$42,78

[1] Madera County created March 11, 1893, from a portion of Fresno County. Between 80 per cent and 90 per cent of th gold and silver produced in Fresno County prior to 1893 was from that part now in Madera County.

[2] Includes crushed rock, rubble, rip-rap, sand, gravel.

[3] See under 'Unapportioned.'

MADERA COUNTY, 1893[1]-1934

Granite		Miscellaneous stone[2], value	Miscellaneous and unapportioned		
Cubic feet	Value		Amount	Value	Substance
48,858	$31,494				
39,590	49,662				
48,628	73,525	$7,800			
39,030	37,215	1,249			
23,103	49,673	500			
47,433	36,000	2,500			
124,015	80,000			$65,000	Unapportioned, 1900-1909.
96,716	294,799	600			
165,845	78,041	4,000			
128,581	389,800	1,000			
113,627	98,083	500			
42,316	123,106				
65,472	176,416				
99,278	93,372				
140,086	123,668	2,140	2,279 lbs.	84	Lead.
142,622	111,380	5,836			
99,192	74,152	1,112			
99,900	74,190	800			
82,135	56,058	3,213	5,533 lbs.	249	Lead.
150,994	270,123	1,466			
	186,543	6,221	50 tons	1,000	Pumice.
	84,632	37,640		1,000	Other minerals.
128,865	172,191	7,915			
	114,400	1,525	221 lbs.	19	Lead.
	40,355	1,540			
	64,358	1,500			
	98,523				
	461,822	4,765			
	454,222	16,948			
	486,670			18,750	Other minerals.
	935,820	11,750			
	1,358,410	16,600			
	418,683	5,325			
	[3]	[3]		1,055,447	Granite paving blocks and miscellaneous stone.
[3]		[3]		508,740	Granite and miscellaneous stone.
[3]		[3]		1,022,072	Granite and miscellaneous stone.
			4,933 lbs.	250	Lead.
[3]		[3]		674,387	Granite and miscellaneous stone.
[3]		2,015		483,912	Other minerals.
[3]		[3]		288,739	Granite and miscellaneous stone.
			5,442 lbs.	210	Lead.
[3]		[3]		123,198	Granite, miscellaneous stone, volcanic ash.
[3]		53,590		197,320	Granite and volcanic ash.
	[3]$7,197,386	[3]$200,050		$4,440,377	

Year	Brick		Miscellaneous stone[1]	
	M	Value	Tons	Value
1888	1,600	$10,000		
1889	*2,000	12,000		
1890	*5,000	30,000		
1891	*10,000	60,000		
1892	*12,000	72,000		
1893	18,000	108,000		
1894	28,500	172,500		$16,850
1895	29,000	145,000		7,790
1896	15,000	85 000	7,849	8,260
1897	15,000	89,000	6,000	7.200
1898	15,500	66.000	1,710	1,800
1899	16,500	76,000	4,400	5,150
1900	25,000	200,000	3,000	2,500
1901	14,320	100 240	34,000	27,987
1902	14,600	97,700	149,450	105,350
1903	13,819	78,095	144,715	140,332
1904	20,500	132,000	216,576	170,995
1905	22,877	163,585	113,000	44,250
1906	23,900	199,300	54,000	53,000
1907	16,000	118,000	157,100	134,111
1908	10,000	50,000	111,686	66,700
1909	4,500	105,000	132,010	67,010
1910	22,497	99,185	112,000	74,700
1911	19,695	87,445	173,646	108,786
1912	18,000	88,200	5,300	3,000
1913	16,000	70,500	428,357	198,953
1914	15,000	55,000		490,137
1915	10,000	50,000		101,528
1916	[2]			74,000
1917	[2]			158,582
1918	[2]			89,458
1919	[2]			127,111
1920	[2]			208,302
1921	[2]			202,333
1922	[2]		[2]	[2]
1923	[2]			516,936
1924	[2]			356,035
1925	[2]			244,602
1926	[2]			413,712
1927	[2]			381,256
1928	[2]			309,218
1929	[2]		[2]	[2]
1930	[2]		[2]	[2]
1931	[2]		[3]	[2]
1932	[2]			189,937
1933	[2]		[2]	[2]
1934	[2]			136,127
Totals	[2]434,808	$2,619,750		[2]$5,243,998

* Estimated.
[1] Includes crushed rock, rubble, rip-rap, sand, gravel.
[2] See under 'Unapportioned.'

MARIN COUNTY, 1888-1934

Mineral water		Miscellaneous and unapportioned		
Gallons	Value	Amount	Value	Substance
		7,000 cu. ft	$5,000	Granite
		700 tons	1,400	Salt.
		150 tons	300	Salt.
52,000	$12,050			
47,500	5,075		42,000	Unapportioned, 1900-1909.
100,000	10,000			
328,740	36,500			
260,000	31,000			
60,000	9,000			
60,000	9,000			
60,000	9,000			
[2]			74,000	Brick and mineral water.
[2]			113,720	Brick and mineral water.
[2]			86,725	Brick, copper, gold, mineral water, silver.
[2]			101,863	Brick and mineral water.
[2]			127,443	Brick and mineral water.
[2]			116,443	Brick and mineral water.
[2]	[2]		403,099	Brick, mineral water, potash, miscellaneous stone.
			171,945	Brick, clay, mineral water.
			171,196	Brick, pottery clay, mineral water.
[2]			199,200	Brick, clay and mineral water.
[2]			113,841	Brick and mineral water.
[2]			145,748	Brick and mineral water.
[2]			140,350	Brick and mineral water.
[2]			470,002	Brick mineral water, miscellaneous stone.
[2]			405,541	Brick, mineral water, miscellaneous stone.
			544,760	Brick, miscellaneous stone.
[2]			63,900	Brick and mineral water.
[2]			205,150	Brick, clay (pottery), mineral water, miscellaneous stone.
[2]			47,227	Brick and mineral water.
[2]962,240	$121,625		$3,741,853	

MINERAL PRODUCTION OF MARIPOSA COUNTY, 1880-1934

Year	Gold, value	Silver, value	Copper		Miscellaneous and unapportioned		
			Pounds	Value	Amount	Value	Substance
1880	$150,017	$1,300					
1881	200,000	1,200					
1882	250,000	4,000					
1883	220,000	3,000					
1884	180,000						
1885	149,177	100					
1886	197,600						
1887	187,165	96					
1888	175,000	250					
1889	145,819	210					
1890	124,265	22					
1891	84,414						
1892	81,011	67					
1893	164,116	307					
1894	153,708	39					
1895	216,622	7					
1896	335,637	180					
1897	451,427	660					
1898	336,418	993					
1899	562,829	2,207			110 sq'r's	$600	Slate.
1900	157,663	13,853					
1901	504,928	4,787	191,622	$30,180	70,000 lbs.	3,080	Lead.
1902	631,478	3,880	104,700	11,940			
1903	542,355	3,353	61,627	6,808			
1904	429,771	2,839	11,500	1,466			
1905	386,380	5,231	12,541	1,956		25	Platinum.
1906	366,394	3,377					
1907	405,498	4,500			1,142 lbs.	60	Lead.
1908	439,862	4,732	29,124	2,958		36,560	Miscellaneous stone.
1909	396,465	2,729				62,430	Miscellaneous stone.
						8,431	Unapportioned, 1900-1909.
1910	317.580	2,364				21,501	Miscellaneous stone.
					800 tons	4,800	Barytes.
1911	172,532	1,390	14,641	1,830			
1912	160,541	6,796	284,587	46,957			
1913	171,034	7,430	416,031	64,485		3,130	Other minerals.
						15,366	Miscellaneous stone.
1914	131,458	677	277,472	36,904	2,000 tons	3,000	Barytes.
					100 cu. ft.	100	Marble.
1915	385,577	2,175	38,630	6,760		17,214	Miscellaneous stone.
						600	Other minerals.
1916	401,718	2,680	162,318	39,930	1,857 lbs.	128	Lead.
						4,143	Other minerals.
						39,372	Miscellaneous stone.
1917	313,296	3,221	53.381	14,583	1,075 lbs.	92	Lead.
						13,399	Other minerals.
						7,646	Miscellaneous stone.
1918	337,682	5,083	30,294	7,483		1,856	Chromite and lead.
						400	Miscellaneous stone.
1919	253,392	4,139	24,879	4,627		8	Other minerals.
						400	Miscellaneous stone.
1920	261,830	4,705	[1]			4,096	Barytes, copper, lead.
						400	Miscellaneous stone.
1921	331,295	5,251				5,655	Barytes and pyrites.
						400	Miscellaneous stone.
1922	218,571	3,301				4,960	Barytes, pyrites and miscellaneous stone.
1923	141,883	1,735				27,293	Barytes, pyrites and miscellaneous stone.
1924	182,099	1,608				3,000	Other minerals.
						48,000	Miscellaneous stone.
1925	192,810	1,758				3,500	Other minerals.
						436,794	Miscellaneous stone.
1926	182,313	1,518				130,804	Miscellaneous stone.
						5,089	Barytes, copper and pyrites.
1927	183,805	1,376				2,000	Granite.
						259,677	Miscellaneous stone.
						53,020	Barites, pyrite, slate.

MINERAL PRODUCTION OF MARIPOSA COUNTY, 1880-1934—Continued

Year	Gold, value	Silver, value	Copper		Miscellaneous and unapportioned		
			Pounds	Value	Amount	Value	Substance
1928	$120,568	$2,199	[1]			$13,988	Granite.
					3,728 tons	21,776	Silica.
						68,037	Miscellaneous stone.
						55,597	Barite, copper.
1929	91,052	651	6,302	$1,109		64,966	Miscellaneous stone.
						86,239	Barite, silica.
1930	58,985	318	3,629	472		15,133	Miscellaneous stone.
						68,557	Barite, granite, lead.
1931	88,600	551	[1]			33,410	Miscellaneous stone.
						71,080	Barite, copper, granite, lead, silica.
1932	169,627	636	[1]			131,625	Miscellaneous stone
						77,366	Barite, copper, granite, lead.
1933	254,663	1,112	[1]			280,016	Miscellaneous stone.
						39,327	Barite, copper, granite.
1934	517,443	3,214	1,771	142		185,960	Miscellaneous stone.
						101,149	Barite, granite, lead.
Totals	$14,266,373	$129,817	[1]1,725,049	$280,590		$2,543,255	

[1] See under 'Unapportioned.'

Year	Brick		Manganese ore	
	M	Value	Tons	Value
1880				
1881				
1882				
1895				
1896				
1898	258	$1,080		
1899	200	1,800		
1900	25	400		
1901	200	2,500		
1902	200	2,000		
1903	550	5,580		
1904	260	3,120		
1905	635	6,470		
1906	500	5,000		
1907	400	4,000		
1908	260	2,600		
1909	150	1,500		
1910				
1911	160	1,600		
1912				
1913				
1914				
1915			2,858	$23,036
1916			1,735	43,005
1917	[1]		1,541	40,515
1918			1,432	58,962
1919				
1920				
1921	[1]		[2]	
1922	[1]			
1923				
1924	550	7,125		
1925	[1]			
1926				
1927	[2]			
1928				
1929	[2]			
1930	[2]			
1931				
1932				
1933				
1934				
Totals	[2]4,348	$44,775	[2]7,566	$165,518

[1] Includes crushed rock, rubble, rip-rap, sand, gravel.
[2] See under 'Unapportioned.'

MENDOCINO COUNTY, 1880-1934

Mineral water		Miscellaneous stone[1], value	Miscellaneous and unapportioned		
Gallons	Value		Amount	Value	Substance
				$733	Gold.
				125	Silver.
				1,000	Gold.
			50 tons	150	Coal.
			450 tons	2,250	Bituminous rock.
17,470	$6,988				
24,875	8,048				
27,950	8,220				
28,575	7,898				
38,900	15,000				
40,000	12,000			75	Gold.
90,000	18,000			40	Gold.
				19	Gold.
40,000	9,800		50 flasks	1,825	Quicksilver (1906).
45,000	9,800				
45,000	9,800				
45,000	9,000	$1,200		18,000	Unapportioned, 1900-1909.
		500			
		300			
		9,450			
		560			
		1,500			
		8,275	300 tons	2,400	Magnesite.
				2,000	Other minerals.
		5,600		4,300	Brick, chromite, magnesite.
		5,000		226	Gold, platinum.
			555 tons	44,200	Chromite.
		7,000		7,214	Chromite, platinum.
		7,500		18,610	Chromite, manganese, natural gas, platinum
				1,509	Gold.
		40,000		13	Silver.
				3,200	Brick, manganese, natural gas, platinum.
		18,762		1,800	Brick, natural gas, platinum.
		48,360		5,050	Coal, natural gas.
		49,680		3,963	Coal, natural gas, platinum, manganese.
		11,603		4,930	Brick, coal, natural gas.
		15,750		50	Other minerals.
		44,630		3,040	Brick and natural gas.
		40,420		20	Other minerals.
		55,925		3,075	Brick, natural gas.
		119,429		3,633	Brick, limestone, natural gas.
		70,755		1,952	Other minerals.
		101,619		50	Other minerals.
		35,010		155	Gold.
				118	Limestone, natural gas.
		14,301		50	Other minerals.
442,770	$114,554	$713,129		$135,775	

MINERAL PRODUCTION OF MERCED COUNTY, 1880-1934

Year	Gold, value	Silver, value	Copper		Brick		Miscellaneous and unapportioned		
			Pounds	Value	M	Value	Amount	Value	Substance
1880	$17,515								
1881	1,500								
1882	10,000								
1883	10,000								
1884	6,500								
1885	10,000								
1886	7,000								
1887	10,767	$5							
1888	10,000								
1889	4,843								
1890	2,000	59							
1891	1,728	17							
1892	445								
1893									
1894	763								
1895	1,500								
1896	1,250								
1897									
1898									
1899									
1900	[1]								
1901	[1]		79,071	$12,453					
1902			14,400	1,656					
1903	[1]		6,000	780					
1904	[1]		8,900	1,135					
1905	[1]				600	$3,500			
1906					650	6,000			
1907	822	10			1,250	12,500			
1908	[2]182,970	[3]1,196	694	70	700	6,300	965 lbs.	$36	Lead.
1909	[2]228,492	[2]572			700	6,300		18,264	Unapportioned.
1910	[1]	[1]			700	6,300		64,764	Miscellaneous stone.
1911	[1]	[1]						49,548	Miscellaneous stone.
1912	[1]	[1]						45,000	Miscellaneous stone.
1913	[4]2,255	[4]92	19,240	2,982				30,000	Miscellaneous stone.
1914	[2]111,361	[2]340							
1915	[3]	[3]					690 lbs.	32	Lead.
								94,000	Other minerals.
1916	[3]	[3]					90 tons	720	Magnesite.
								80,810	Gold, platinum, silver
1917	[3]	[3]						70,500	Miscellaneous stone.
								76,616	Gold, platinum, silver
1918	41,089	254						32,500	Miscellaneous stone.
								1,006	Other minerals.
1919	[1]	[1]						40,350	Miscellaneous stone.
1920								24,800	Miscellaneous stone.
1921	3,163	87						30,300	Miscellaneous stone.
1922	[3]	[3]			[3]			88,110	Miscellaneous stone.
								69,469	Building tile, gold and silver.
1923	[3]	[3]			[3]			134,036	Miscellaneous stone.
								101,567	Brick, building tile, go and silver.
1924	355	1	[3]		[3]			14,262	Miscellaneous stone.
								72,933	Clay and clay product
								52	Copper and lead.
1925	289	1			[3]			36,646	Miscellaneous stone
								43,326	Clay and clay product
1926					[3]			156,486	Miscellaneous stone.
								36,179	Clay and clay product
1927					[3]			189,537	Miscellaneous stone.
								177,336	Brick, hollow buildi tile, cement, clay (pottery).

MINERAL PRODUCTION OF MERCED COUNTY, 1880-1934—Continued

Year	Gold, value	Silver, value	Copper		Brick		Miscellaneous and unapportioned		
			Pounds	Value	M	Value	Amount	Value	Substance
1928	310	2				[3]		652,875	Other minerals.[6]
1929	84,188	186				[3]		1,026,124	Other minerals.[7]
1930	88,328	146				[3]		29,250	Miscellaneous stone.
								684,176	Other minerals.[8]
1931	173,551	226						534,012	Other minerals.[9]
1932	391,017	525						22,500	Miscellaneous stone.
								335,700	Other minerals.[10].
1933	451,023	610						13,875	Miscellaneous stone.
								300,506	Other minerals.[11]
1934	598,695	1,051						38,643	Miscellaneous stone.
								412,103	Cement, gypsum, platinum.
Totals	$2,453,719	$5,380	128,305	$19,076	4,600	$40,900		$5,828,959	

[1] Included with Stanislaus County production.
[2] Includes Stanislaus County production.
[3] See under 'Unapportioned.'
[4] Dredge output included under Stanislaus County.
[6] Includes brick and hollow building tile, cement, clay (pottery), miscellaneous stone.
[7] Includes brick and hollow building tile, cement, miscellaneous stone.
[8] Includes brick and hollow building tile, clay (pottery), lead.
[9] Includes cement, copper, miscellaneous stone.
[10] Includes cement, platinum, volcanic ash.
[11] Includes cement, gypsum, platinum.

MINERAL PRODUCTION OF MODOC COUNTY, 1880-1934

Year	Gold, value	Silver, value	Salt		Miscellaneous stone[1], value	Miscellaneous and unapportioned		
			Tons	Value		Amount	Value	Substance
1880	$10,000							
1881	20,000	$1,500						
1882								
1883	50,000							
1884	60,000							
1885	60,000							
1886								
1909	[2]							
1910	5,438	75						
1911	19,875	363						
1912	27,893	494	50	$800				
1913	6,061	94	40	720				
1914	1,000	10	40	720				
1915	7,557	104	[2]		$300		$720	Other minerals.
1916	2,729	90	[2]		200		540	Other minerals.
1917					200			
1918	[2]	[2]	[2]		200		8,020	Gold, salt, silver.
1919	6,478	390	[2]		550		1,802	Other minerals.
1920	[2]	[2]	[2]		700		3,968	Gem material (Iceland Spar) gold, salt, silver.
1921			[2]		34,930		1,720	Gem material (Iceland Spar) and salt.
1922			[3]		[3]		16,018	Salt, miscellaneous stone.
1923	[3]	[3]	[3]		8,109		288	Gold, silver.
1924			[3]		[3]		1,300	Salt, miscellaneous stone
1925							2,400	Salt, miscellaneous stone.
1926	158	3			36,450		1,380	Other minerals.
1927					61,651		600	Other minerals.
1928					29,440		1,000	Other minerals.
1929					30,346		650	Other minerals.
1930			[3]		[3]		16,250	Miscellaneous stone and salt.
1931	293	2			180,104		851	Other minerals.
1932	2,082	29	[3]		48,221		670	Gems and salt.
1933	1,346	13	[3]		164,614		774	Other minerals.
1934	6,323	67	[3]		41,150		577	Other minerals.
Totals	$287,233	$3,234	[2]130	$2,240	[3]$637,165		$59,528	

[1] Includes crushed rock, rubble, sand, gravel.
[2] Included under Lassen County production.
[3] See under 'Unapportioned.'

MINERAL PRODUCTION OF MONO COUNTY, 1880-1934

Year	Gold, value	Silver, value	Lead		Lime		Miscellaneous and unapportioned		
			Pounds	Value	Barrels	Value	Amount	Value	Substance
1880	$2,407,236	$582,905							
1881	3,385,000	300,000							
1882	2,200,000	380,000							
1883	1,750,000	290,000							
1884	1,000,000	285,000							
1885	482,860	91,849							
1886	439,558	163,502							
1887	382,498	118,945							
1888	297,000	75,000							
1889	193,264	86,827							
1890	144,180	52,293							
1891	302,415	18,983							
1892	396,296	271,058							
1893	293,637	11,401							
1894	358,824	11,549	50,000	$1,500					
1895	552,690	84,910	94,400	2,926			800 cu. ft.	$8,000	Onyx.
1896	451,553	82,283	73,500	2,205	500	$2,000	3,000 cu. ft.	24,000	Onyx.
1897	520,101	72,491	32,000	1,088	1,200	4,800			
1898	446,017	66,667	75,000	2,737	3,000	4,000			
1899	697,069	47,547	28,000	1,190	1,200	3,750			
1900	670,200	75,921	50,000	2,000	1,100	4,000			
1901	493,355	25,091	29,000	1,160	2,000	3,000	1,938 lbs.	305	Copper.
1902	510,596	36,548	4,400	154	2,000	2,000			
1903	334,713	20,067	1,000	36	1,818	5,000	1,600 lbs.	208	Copper.
1904	268,930	2,955			215	850			
1905	308,884	11,240							
1906	338,698	13,151							
1907	383,971	29,797							
1908	413,946	26,134					7,100 gals.	5,575	Mineral water.
1909	354,909	37,792						106,772	Unapportioned, 1900-1909.
1910	435,724	9,391							
1911	261,232	35,508	37,000	1,665					
1912	377,518	70,602	23,936	1,077	4,961	3,721	8,179 lbs.	1,350	Copper.
1913	147,271	23,263			2,135	1,600	79,319 lbs.	12,294	Copper.
1914	7,000	10,000					1,000 lbs.	150	Salt.
1915	107,302	1,923						200	Other minerals.
1916	237,084	3,606						300	Other minerals.
1917	209,040	5,662	1,912	164				3,906	Copper, molybdenu salt.
				Totals	20,129	$34,721			
					Miscellaneous stone, value				
1918	31,252	22,727	1,318	94			160 lbs.	40	Copper.
								750	Other minerals.
1919	29,428	55,558	1,556	82			539 lbs.	100	Copper.
1920	144,746	34,369	85,014	6,801		$1,000	3,215 lbs.	592	Copper.
								750	Other minerals.
1921	37,754	15,160	42,962	1,933			2,940 lbs.	379	Copper.
								1,650	Onyx and salt.
1922	65,747	11,686	9,820	540			4,338 lbs.	586	Copper.
								8,304	Other minerals.
1923	34,661	3,120				10,000		45,010	Other minerals
1924	49,651	6,472	32,458	2,597		19,044		48,927	Other minerals.
1925	5,503	1,590	22,488	1,957		29,250		146,300	Other minerals.
1926	20,204	121,404	20,906	1,672			2,628	368	Copper.
								66,200	Other minerals.
1927	3,686	21,822	4,830	304				76,375	Other minerals, cla copper, pumic salt, andalusite miscellaneousston
1928	6,307	176,115						31,998	Clay (pottery), pun ice, volcanic as salt, travertine.
1929	10,025	28,137	19,602	1,235		15,257	16,552 lbs.	2,913	Copper.
								161,263	Andalusite, clay (po tery), pumice, vo canic ash, salt.
1930	26,234	3,166				19,770	2,006 lbs.	216	Copper.
								99,553	Andalusite and pun ice.
1931	125,342	5,372	137	5		48,259		23,945	Pumice and salt.
1932	26,333	5,292	33,401	1,002		64,942	3,970 lbs.	250	Copper.
								37,861	Andalusite and pun ice.

MINERAL PRODUCTION OF MONO COUNTY, 1880-1934—Continued

Year	Gold, value	Silver, value	Lead		Lime		Miscellaneous and unapportioned		
			Pounds	Value	Barrels	Value	Amount	Value	Substance
1933	33,378	1,004	5,537	170	-------	20,354	665 lbs. -------	43 26,198	Copper. Andalusite and pumice.
1934	56,092	20,205	7,487	277	-------	77,806	510 lbs. -------	41 58,017	Copper. Gems (rutile), molybenum ore, pumice, salt, andalusite.
Totals	$23,266,914	$4,065,031	787,664	$36,571	-------	$305,682	-------	$1,027,501	

[1] Includes crushed rock, rubble, rip-rap, sand, gravel.

Year	Gold, value	Silver, value	Brick		Diatomaceous earth		Lime		Limestone	
			M	Value	Tons	Value	Barrels	Value	Tons	Value
1889	$3,500									
1890	11,815									
1891										
1892										
1893										
1894	8,000									
1895										
1896										
1897									2,000	$2,000
1898			400	$2,400					2,049	1,640
1899			200	1,400					7,744	6,970
1900			200	1,600					8,000	10,800
1901	13,800								5,463	7,500
1902	6,860	$18					22,000	$13,200		
1903	8,920						26,000	23,400	6,516	9,000
1904	6,941		200	1,600			3,240	3,240	4,550	21,500
1905	4,000						10,000	10,000		
1906	625	3			80	$400	40,000	50,000		
1907	1,076	9					100,000	125,000		
1908	1,318	9	426	3,838			50,000	50,000		
1909	333	5	300	2,900	500	3,500	50,006	62,507	10,658	45,678
1910	[2]1,013	10	993	9,957	500	3,500	30,894	29,349	2,500	7,500
1911					850	5,950			2,000	6,000
1912	[3]7,647	67							6,000	8,000
1913	6,491	27			1,700	6,800			6,500	13,000
1914	4,000	20								
1915					[4]					
1916					[4]					
1917					[4]				[4]	
1918					[4]					
1919					[4]					
1920					[4]					
1921					[4]					
1922										
1923					[4]					
1924					[4]	[5]				
1925	998	3			[4]					
1926	706	3			[4]					
1927	500	2			[4]					

MONTEREY COUNTY, 1889-1934

Mineral water		Glass sand		Miscellaneous stone[1], value	Miscellaneous and unapportioned		
Gallons	Value	Tons	Value		Amount	Value	Substance
				$1,500			
5,000	$1,000						
2,000	200						
21,000	1,050			14,025			
1,500	750			8,258			
20,000	4,000			2,775			
15,000	3,250	4,500	$15,750	8,869	200 tons	$1,000	Coal.
15,000	1,750	4,500	12,225	5,200			
55,000	1,250	5,989	4,967	3,167	61 tons	732	Asphaltum.
25,000	1,000	8,295	7,272		124 tons	1,488	Asphaltum.
5,000	1,000	9,257	8,127				
24,000	12,000	750	1,125				
120,000	12,000	11,065	8,178		4,800 tons	24,000	Coal.
		6,805	5,120	31,727	7 flasks	296	Quicksilver.
10,000	2,000	6,496	4,872	43,351	1 flask	49	Quicksilver.
						344,789	Unapportioned, 1900-1909.
					7 flasks	317	Quicksilver.
		7,594	5,890	47,487	700 tons	5,000	Feldspar.
					200 tons	2,500	Fuller's earth.
				27,011	11,000 tons	4,950	Clay.
26,000	7,000	9,016	7,916	60,119	4,000 tons	6,000	Clay.
					320 tons	3,200	Coal.
						78,332	Other minerals.
20,000	7,000	9,141	9,192	12,556	35,000 tons	12,000	Clay.
					300 tons	2,700	Fuller's earth.
					5,992 tons	17,976	Coal.
26,000		9,210	7,633			9,450	Other minerals.
	7,900			39,202	700 tons	3,500	Feldspar.
					450 tons	3,150	Fuller's earth.
8,200	2,050	"		32,799		50,137	Coal, feldspar, diatomaceous earth, quicksilver, silica.
5,900	590			58,623		50,659	Barytes, feldspar, diatomaceous earth, quicksilver, salt, silica.
					6,392 tons	23,468	Dolomite.
		"		57,810		57,508	Barytes, diatomaceous earth, limestone, mineral water, quicksilver, salt, silica.
					4,900 tons	25,950	Dolomite.
		"		52,697	700 tons	3,800	Feldspar.
						37,240	Barytes, coal, diatomaceous earth, quicksilver, salt, silica.
		"		73,031	8,280 tons	29,120	Dolomite.
						43,353	Barytes, coal, feldspar, diatomaceous earth, salt, silica.
200	20	"		[5]84,056	5,755 tons	26,238	Dolomite.
						16,135	Barytes, coal, feldspar, diatomaceous earth, salt, silica, (glass sand).
		"		[5]63,316	2,500 tons	8,750	Dolomite.
						98,089	Asbestos, coal, diatomaceous earth, mineral water, salt, glass sand.
"		"		[5]86,180		169,139	Asbestos, coal, dolomite, quicksilver, salt, glass sand.
"		"		[5]140,724		81,298	Asbestos, diatomaceous earth, dolomite, mineral water, quicksilver, salt, glass sand.
					238 tons	436	Clay (pottery).
"	"			239,847	1,240 tons	4,960	Dolomite.
						41,247	Diatomaceous earth, mineral water, quicksilver, salt, shale, building stone, silica (glass sand).
					414 tons	1,161	Clay (pottery).
	"			409,423		66,136	Diatomaceous earth, quicksilver, salt, shale, building stone, silica (glass sand).
					491 tons	1,164	Clay (pottery).
	"			263,244		94,876	Diatomaceous earth, dolomite, salt, sandstone, (shale building stone), silica (glass sand).
					1,100 tons	550	Clay (pottery).
	"			244,584		105,413	Diatomaceous earth, dolomite, building stone (andesite, sandstone), quicksilver, salt.

MINERAL PRODUCTION

Year	Gold, value	Silver, value	Brick		Diatomaceous earth		Lime		Limestone	
			M	Value	Tons	Value	Barrels	Value	Tons	Valu
1928					[4]					
1929	263	1			[4]					
1930					[4]					
1931	148	1			[4]					
1932	794	1			[4]					
1933	195				[4]					
1934	517	1			[4]					
Totals	$93,460	$179	2,719	$23,695	[3]3,630	$20,150	332,140	$366,696	[3]63,980	$139,5

[1] Includes crushed rock, rubble, sand, gravel.
[2] Includes Monterey, San Luis Obispo and Santa Cruz Counties.
[3] Includes Los Angeles and San Luis Obispo Counties.
[4] See under 'Unapportioned.'
[5] Includes molding, building, blast, filter, roofing sa

MONTEREY COUNTY, 1889-1934—Continued

Mineral water		Glass sand		Miscellaneous stone[1], value	Miscellaneous and unapportioned		
Gallons	Value	Tons	Value		Amount	Value	Substance
				$210,489	94,700 cu. ft.	$22,200	Sandstone (shale building stone).
						118,971	Clay (pottery), diatomite, dolomite, salt.
		"		213,082		11,900	Sandstone (shale building stone).
						129,612	Clay (pottery), diatomite, dolomite, glass sand, salt.
		"		233,971		30,500	Sandstone (shale building stone.)
						188,503	Asbestos, clay (pottery), diatomite, dolomite, glass sand, paving blocks, quicksilver, salt.
		"		155,098		26,480	Sandstone (shale building stone).
						141,744	Clay (pottery), dolomite, glass sand, coal, silica.
		"		95,802		10,560	Sandstone (shale building stone).
						59,140	Coal, diatomite, natural gas, glass sand, salt.
		"		64,107		49,738	Clay (pottery), coal, diatomite, glass sand, dolomite, natural gas, quicksilver.
		"		101,652		88,732	Clay (pottery), coal, diatomite, dolomite, natural gas, quicksilver, salt, sandstone, silica (glass sand).
[3]398,800	$65,810	[3]92,618	$98,261	$3,185,782		$2,437,336	

Year	Quicksilver		Mineral water	
	Flasks	Value	Gallons	Value
Manhattan Mine output, 1863 to 1876	3,594	$235,876	[2]	
1862	444	16,139		
1863	852	35,852		
1864	2,714	124,573		
1865	3,545	162,716		
1866	2,254	119,755		
1867	7,862	360,866		
1868	9,808	450,187		
1869	6,598	302,848		
1870	5,766	330,853		
1871	4,098	258,584		
1872	4,876	321,475		
1873	5,266	423,018		
1874	11,705	1,231,132		
1875	9,453	795,470		
1876	11,303	497,332		
1877	13,127	489,637		
1878	10,810	355,649		
1879	9,446	281,961		
1880	6,830	211,730		
1881	7,746	231,063		
1882	9,013	254,467		
1883	7,784	223,790		
1884	5,188	158,234		
1885	3,891	119,648		
1886	5,656	200,788		
1887	6,247	264,717		
1888	5,150	218,875		
1889	5,402	243,090		
1890	3,934	206,535		
1891	4,896	221,544		
1892	8,612	350,595		
1893	11,505	422,809		
1894	9,705	298,016	97,275	$41,231
1895	9,318	372,500	199,397	99,700
1896	11,411	403,031	218,680	81,335
1897	12,281	459,753	159,896	81,948
1898	12,368	472,972	169,261	63,919
1899	11,696	598,322	171,567	85,964
1900	8,724	403,500	171,000	72,200
1901	7,798	388,176	158,830	109,900
1902	7,142	304,474	236,229	97,048
1903	7,859	333,006	244,400	124,000
1904	[3]5,328	199,586	386,000	104,750
1905	4,853	171,910	279,460	89,500
1906	2,380	86,870	84,000	90,500
1907	2,500	95,400	240,000	103,600
1908	2,340	98,912	145,500	101,030
1909	1,625	80,535	123,072	96,279
1910	646	29,231	152,772	92,960
1911	140	6,441	141,540	86,530
1912	287	12,065	136,750	81,997
1913	287	11,546	151,520	75,548
1914	240	11,772	142,940	73,280
1915	507	45,224	133,387	73,535
1916	1,150	107,525	152,764	93,370
1917	834	78,320	126,124	70,058
1918	1,297	143,850	92,512	59,620
1919	644	58,140	76,860	60,395
1920	266	18,588	80,431	38,621
1921	35	1,659	72,364	55,760
1922	189	5,143	80,481	54,341
1923	157	9,759	69,639	55,757
1924	----------	[4]	73,608	53,391
1925	----------	----------	63,836	44,251
1926	----------	[4]	80,376	49,468
1927	776	88,425	81,864	50,116

NAPA COUNTY, 1862-1934

Magnesite		Miscellaneous stone,[1] value	Miscellaneous and unapportioned		
Tons	Value		Amount	Value	Substance
				$93,000	Gold and silver.
				5,000	Gold and silver.
				16,000	Gold and silver.
				22,500	Gold and silver.
				50,000	Gold and silver.
				95,000	Gold and silver.
				57,046	Gold and silver.
1,500	$6,000			30,517	Gold and silver.
				23,689	Gold and silver.
1,440	10,240		51 tons	2,040	Infusorial earth.
2,200	17,000				
1,500	11,000				
1,143	13,671				
1,263	19,075				
1,180	17,130				
1,983	17,400				
700	11,622		8,919 tons	6,690	Limestone.
150	450	$500	7,086 tons	8,496	Limestone.
61	915	3,375	290,368 bbls.	435,552	Cement.
12	78	4,019			
		500			
		2,777			
		3,000			
		78,728			
		138,636		3,151,182	Unapportioned, 1900 to 1909.
		122,219		2,893,786	Unapportioned, 1910 to 1913.
		127,428			
55	550	172,646			
		243,759		8,000	Sandstone.
		130,316		756,380	Other minerals.
1,050	9,450	108,387		647,625	Cement, sandstone.
			715 tons	11,559	Chromite.
13,960	108,556	88,441	119,500 cu ft.	5,500	Building stone (tuff).
				663,586	Other minerals.
			844 tons	22,020	Chromite.
40,329	387,930	110,039		752,706	Cement, clay, copper.
			667 tons	38,432	Chromite.
29,163	263,367	82,944		1,088,154	Cement, gold, silver.
10,112	86,752	70,016			
[4]		74,550		98,382	Magnesite, volcanic ash.
		111,100		26,720	Other minerals.
[4]		200,151		52,635	Building stone (red tuff), magnesite.
		215,356		70,720	Other minerals.
[4]		261,523		44,351	Magnesite, quicksilver.
				195	Gold.
		177,186		1,420	Silver.
				6,120	Other minerals.
				7,817	Gold.
		207,882		50,616	Silver.
				25,788	Other minerals.
				7,235	Gold.
		209,996		56,435	Silver.
				5,022	Copper, sandstone.

Year	Quicksilver		Mineral water	
	Flasks	Value	Gallons	Value
1928	781	$85,477	70,291	$32,707
1929	2,081	246,747	86,141	90,703
1930	2,000	213,840	43,902	13,837
1931	1,937	168,710	106,062	49,665
1932	647	34,634	33,011	12,293
1933	842	47,059	15,237	9,940
1934	1,706	120,372	47,900	13,900
Totals	[4]350,152	$16,432,296	5,396,819	$2,835,007

[1] Includes crushed rock, macadam, rubble, paving blocks, sand, gravel.
[2] Napa Soda Springs have been bottling water for sale since 1860; but no segregated figures available for Napa County previous to 1894.
[3] Flasks of 76½ pounds to June, 1904; of 75 pounds thence, through 1927; of 76 pounds since January, 1928.
[4] See under 'Unapportioned.'

NAPA COUNTY, 1862-1934—Continued

Magnesite		Miscellaneous stone,[1] value	Miscellaneous and unapportioned		
Tons	Value		Amount	Value	Substance
		$179,078		$9,000	Other minerals.
			4,356 lbs.	767	Copper.
		216,420		17,781	Gold.
			144,180 fine oz.	76,848	Silver.
				556	Other minerals.
			9,257 lbs.	1,203	Copper.
				36,532	Gold.
		[4]	464 lbs.	23	Lead.
			266,386 fine oz.	102,559	Silver.
				164,989	Miscellaneous stone and sandstone.
			1,945 lbs.	177	Copper.
		145,920		14,766	Gold.
			60,009 fine oz.	17,403	Silver.
				200	Other minerals.
		115,982		6,724	Asbestos, pumice, sandstone.
		142,143		10,400	Pumice and sandstone.
		256,982		6,960	Asbestos, pumice, paving blocks, sandstone.
[4]107,801	$981,186	[4]$4,001,999		$11,804,804	

MINERAL PRODUCTION OF

Year	Copper		Gold, value	Granite	
	Pounds	Value		Cubic feet	Value
1880			$2,702,362		
1881			3,700,000		
1882			3,500,000		
1883			3,000,000		
1884			2,950,000		
1885			2,577,873		
1886			3,221,038		
1887			2,719,574		
1888			2,600,000		
1889			2,249,335		
1890			1,969,613		
1891			2,207,886		
1892			1,945,406		
1893			2,067,203		
1894	83,728	$7,535	1,830,155		
1895	33,255	3,325	1,789,816		
1896	28,200	2,820	2,380,756		
1897			1,885,251	1,100	$2,200
1898	30,000	3,000	2,017,628	2,000	1,500
1899	43,438	7,081	2,171,510	2,000	1,500
1900	150,980	20,472	1,812,036		
1901	39,588	6,235	2,121,054		
1902	26,500	3,975	2,142,740	1,000	3,000
1903	4,500	585	2,458,047	2,170	4,160
1904			3,130,304	2,335	5,395
1905			3,179,715	2,155	2,570
1906			2,658,420	9,525	9,300
1907	22,082	4,418	2,162,083	12,840	9,300
1908	30,166	4,104	2,297,963	700	2,100
1909			2,660,235	1,250	2,800
1910			2,533,483	2,225	3,215
1911	1,665	209	2,199,147	1,250	3,500
1912			2,081,958		
1913			2,918,733		
1914	39	5	3,301,948		
1915	1,817	318	3,466,722		
1916	3,487	858	3,669,878	100	100
1917	40,165	10,965	3,682,947		
1918	42,203	10,424	3,070,453		
1919	[2]		2,981,312	[2]	
1920	[2]		2,872,471	[2]	
1921			2,570,162	[2]	
1922	[2]		2,903,573	[2]	
1923	[2]		2,282,155	[2]	
1924	[2]		2,820,032	[2]	
1925	[2]		2,305,607	[2]	
1926	[2]		2,318,846	[2]	
1927	[2]		2,127,195	[2]	
1928	[2]		1,994,002	[2]	
1929	5,702	1,004	1,807,613	[2]	
1930	17,009	2,211	2,193,486		
1931	143,984	13,103	3,304,815		
1932	33,454	2,108	3,640,797		
1933	67,179	4,299	4,676,357		
1934	113,771	9,101	7,118,551	[2]	
Totals	[2]962,912	$118,158	$148,950,246	[2]40,650	$50,640

[1] Includes crushed rock, rubble, sand, gravel.
[2] See under 'Unapportioned.'

NEVADA COUNTY, 1880-1934

Lead		Silver, value	Miscellaneous stone[1], value	Miscellaneous and unapportioned		
Pounds	Value			Amount, (tons)	Value	Substance
		$70,144				
		9,500				
		10,000				
		8,000				
		5,000				
		4,835				
		8,333				
		2,477				
		5,000				
		5,633				
		14,713				
		14,184				
		8,326				
		1,229				
		476		290	$5,800	Mineral paint.
		400		150	2,250	Mineral paint.
		8,584				
		8,116				
		19,476		50	1,000	Mineral paint.
				6,000	30,000	Pyrite.
		17,784		300	5,400	Mineral paint.
				5,400	28,620	Pyrite.
		66,841		2,925	17,550	Pyrite.
		18,122		78	429	Pyrite.
		6,124				
		3,252				
		9,555				
		32,523			20	Platinum.
		24,219				
		17,505				
663	$25	21,914	$1,678			
		24,926	1,874		400,000	Unapportioned, 1900-1909.
		16,506				
14,831	667	15,691				
1,785	80	22,830				
2,090	92	26,542	5,000			
145	6	27,000	2,108		60	Gems.
1,567	74	23,762	3,675		1,950	Other minerals.
1,036	71	35,741	1,225	981	12,795	Chromite.
					23,475	Manganese, platinum, tungsten.
[2]		52,335	1,600	1,962	43,449	Chromite.
					47,101	Asbestos, lead, platinum, tungsten concentrates.
[2]		72,557	1,400	3,328	116,993	Chromite.
					29,884	Asbestos, lead, manganese, platinum, tungsten concentrates.
[2]		68,731	1,976		12,034	Asbestos, barytes, chromite, copper, granite, lead, platinum.
[2]		58,476	6,528		17,531	Asbestos, barytes, copper, granite, lead.
		33,906	19,151		17,862	Asbestos, barytes, granite.
[2]		19,583	27,982		14,867	Barytes, copper, granite, lead, mineral paint.
1,290	90	30,534	42,309		15,682	Asbestos, barytes, copper, granite, mineral paint, platinum.
[2]		39,252	82,200		3,783	Copper, granite, lead.
[2]		32,155	10,333		4,782	Chromite, copper, granite, lead.
4,301	344	30,015	850,000		41,006	Barytes, copper, granite.
[2]		27,581	15,000		43,933	Barytes, copper, granite, lead.
[2]		20,798	4,000		5,086	Copper, granite, lead.
6,603	416	21,861	83,770		65,364	Baryte and granite.
18,164	908	23,316	76,850		23,462	Baryte and platinum.
198,671	7,351	43,611	123,024	149,865 lbs.	5,314	Zinc.
82,119	2,464	29,868	24,866		4,000	Other minerals.
72,380	2,678	56,109	24,400	34,478 lbs.	1,448	Zinc.
					2,100	Other minerals.
130,301	4,821	203,190	151,032		2,300	Other minerals.
[3]536,006	$20,087	$1,479,141	$1,561,981		$1,473,270	

Year	Petroleum		Natural gas, value	Brick	
	Barrels	Value		M	Value
1889					
1890					
1892					
1894					
1895					
1897	12,000	$12,000			
1898	60,000	60,000		300	$2,400
1899	108,077	108,077		200	1,600
1900	254,397	254,397			
1901	302,652	181,591			
1902	1,103,793	824,492			
1903	1,355,104	1,016,285		1,634	13,000
1904	1,470,000	1,144,542		1,500	9,000
1905	1,510,900	711,633		118	11,800
1906	2,388,000	1,194,000		1,365	13,500
1907	2,426,750	1,456,050		3,176	26,000
1908	3,376,689	2,532,517		4,050	20,450
1909	4,270,967	2,690,709		4,090	20,650
1910	5,044,001	3,177,721		2,950	31,000
1911	6,345,275	4,097,980		1,650	11,550
1912	6,704,421	4,478,553	$5,250	1,300	9,100
1913	9,485,362	6,867,402	9,612	2,100	14,000
1914	12,758,678	8,612,108	112,040	1,333	19,300
1915	12,715,457	6,510,314	81,753	1,280	16,000
1916	13,198,591	8,750,666	139,281	1,186	8,300
1917	14,680,801	14,724,843	490,511	and tile	11,000
1918	15,730,462	22,211,412	693,169	477	3,869
1919	14,458,722	26,893,223	837,439	[1]	
1920	15,462,741	33,059,340	862,446	[2]	
1921	22,929,466	45,996,509	1,312,704	2,994	47,720
1922	31,049,491	36,483,162	2,096,629	4,706	73,106
1923	46,474,921	40,897,930	3,914,661	8,499	103,428
1924	31,661,283	37,455,298	2,397,813	[1]	
1925	32,734,420	46,384,673	2,324,014	3,253	39,445
1926	37,989,349	59,225,395	3,556,194	6,272	72,489
1927	46,593,842	56,238,767	3,910,501	1,283	13,143
1928	37,100,943	34,607,932	4,695,769	[2]	
1929	25,861,815	25,504,922	2,602,382	774	7,743
1930	23,113,820	24,500,649	1,394,600	[2]	
1931	17,524,067	13,231,012	1,494,855	[2]	
1932	16,981,368	12,939,802	1,095,752	[2]	
1933	22,046,475	18,239,049	912,317	[2]	
1934	25,891,732	24,258,123	1,366,560	[2]	
Totals	563,176,832	$627,533,078	$36,297,252	[3]56,490	$599,593

[1] Includes crushed rock, rubble, rip-rap, sand, gravel.
[2] See under 'Unapportioned.'

ORANGE COUNTY, 1889-1934

Clay		Stone industry,[1] value	Miscellaneous minerals		
Tons	Value		Amount	Value	Kind
				$6,262	Gold.
				10,943	Gold.
				9,470	Gold.
			1,500 tons	6,000	Coal.
			900 tons	4,000	Coal.
				144	Gold.
			800 tons	3,200	Coal.
			600 tons	2,400	Coal.
			25 tons	250	Gypsum.
			240 cu. ft.	120	Sandstone.
				2,407	Gold.
			500 tons	2,250	Coal.
			300 tons	1,500	Coal.
				4,000	Gold.
				250	Gold.
				150	Gold.
			408 cu. ft.	200	Sandstone.
10,500	$14,581		500 cu. ft.	250	Sandstone.
7,740	12,900				
			964 lbs.	193	Copper.
			24,472 lbs.	1,303	Lead.
			33,546 lbs.	2,000	Zinc.
9,000	18,600	$3,005	14,405 lbs.	534	Lead.
2,617	26,170	23,665		72,586	Unapportioned 1900-1909.
500	5,000	6,443			
2,000	3,200	855			
2,100	3,400	21,248	459 tons	688	Glass sand.
15,500	20,666	36,815			
		88,315			
			364 lbs.	17	Lead.
		9,027	4 lbs.	1	Copper.
		3,773		3,066	Other minerals.
"		2,699		2,573	Pottery clay, copper, lead.
3,649	4,650	1,560			
"		1,944		18,499	Clay and clay products.
				97,632	Lead and potash.
			455 lbs.	84	Copper.
				145	Gold.
"		80,988	15,932 lbs.	1,275	Lead.
				7,263	Silver.
				96,595	Brick, clay, potash.
		131,301		10,796	Pottery clay, copper, gold, lead and silver.
		270,022		3,168	Clay (pottery), gold, lead and silver.
		536,767		16,203	Clay (pottery), copper, gold, lead and silver.
				121,260	Brick and clay.
"		505,932		907	Copper, lead, silver.
				52	Gold.
13,431	42,562	307,112		995	Silver.
				5,637	Copper, lead, zinc.
13,150	38,989	317,767		60	Gold.
				414	Lead.
				967	Silver.
14,637	49,354	325,676		10,807	Copper, potash, zinc.
				9,600	Barite, quicksilver.
98,392	87,245	244,634		19,597	Brick and quicksilver.
				29	Gold.
			1,471 lbs.	93	Lead.
30,147	111,349	263,250	839 fine oz.	447	Silver.
				1,280	Copper and quicksilver.
18,224	78,366	252,501		109,174	Brick and mineral water.
21,900	28,430	275,367		105,494	Brick and mineral water.
9,892	33,217	87,592		25,882	Brick, mineral water, quicksilver.
				105	Gold.
13,486	49,762	46,340	2 fine oz.	1	Silver.
				16,007	Brick, mineral water, glass sand, quicksilver.
				572	Gold.
12,740	31,328	78,986	2 fine oz.	1	Silver.
				10,461	Brick and mineral water.
[2]299,605	$678,258	$3,923,584		$809,760	

Year	Gold, value	Silver, value	Copper		Brick		Pottery clay†	
			Pounds	Value	M	Value	Tons	Value
1880	$838,133	$640						
1881	850,000	6,500						
1882	800,000							
1883	810,000							
1884	887,320	5						
1885	906,301							
1886	1,071,663	1,397						
1887	855,510	556						
1888	850,000	1,000						
1889	1,245,491	1,975						
1890	1,003,602	1,045						
1891	998,495	5,921						
1892	1,159,080	2,120						
1893	1,351,260	616						
1894	1,851,215	664					22,000	$27,500
1895	1,599,635	5,273					15,000	15,000
1896	1,674,844	6,690					10,000	10,000
1897	1,524,941	6,784					7,500	7,500
1898	1,488,022	5,670					12,000	12,000
1899	1,100,081	1,206					15,000	15,000
1900	986,155	12,058					15,000	15,000
1901	900,745	4,828	11,200	$1,764			15,000	15,000
1902	843,366	3,341	3,200	368			15,000	15,000
1903	570,571	1,116	4,000	520			15,000	15,000
1904	778,355	9,320	600,000	76,500			16,100	16,100
1905	597,793	8,041	367,250	57,291			20,000	10,000
1906	[1]	[1]	200,000	38,600			20,000	15,000
1907	482,772	3,338					20,000	20,000
1908	358,096	2,194			13,000	$46,300	13,000	11,500
1909	281,372	1,492			2,083	52,300	45,300	35,250
1910	257,191	1,157			600	23,438	44,000	27,000
1911	251,298	2,585	118,624	14,828	700	18,000	43,120	29,200
1912	367,383	4,791	78,170	12,898	900	21,250	56,000	41,300
1913	220,785	2,972	429	67	1,900	40,000	63,600	47,200
1914	600,000	4,500	453	60	2,000	40,000	63,700	49,000
1915	414,319	24,543	[1]		2,000	40,000	49,126	37,536
1916	428,400	24,928	1,437,441	353,610	2,540	79,000	29,018	36,230
1917	538,686	13,885	710,601	193,994	[1]		44,097	44,097
1918	230,190	22,432	837,527	206,869	and tile	81,408	29,348	29,348
1919	170,609	3,141			[1]		[1]	
1920	151,088	2,178			and tile	149,924	65,560	76,500

† Figures for value of clay are for crude clay only. The annual value of clay products is several times greater, but is omitted because there is only one factory. Production began in 1875.

[1] Includes granite (prior to 1916), crushed rock, rubble, rip-rap, paving blocks, sand, gravel.

PLACER COUNTY, 1880-1934

Lime and limestone		Miscellaneous stone,[1] value	Miscellaneous and unapportioned		
Amount	Value		Amount	Value	Substance
		$67,200			
		56,620	25 tons	$1,000	Asbestos.
		44,216			
		39,412			
		29,833			
		61,525			
		115,669			
		102,847			
		156,402			
[2]1,500	$9,000	198,530		280	Platinum.
[3]4,000	4,000			1,968	Quartz.
		123,448		375	Platinum.
[2]15,533	8,737	116,746	2 ozs.	36	Platinum.
[2]11,699	11,950	71,130	0.66 ozs.	12	Platinum.
			50 tons	2,500	Asbestos.
[2]11,430	11,430	118,722	70 tons	3,500	Asbestos.
[3]38,869	79,768				
[2]1,727	1,710	178,460	50 tons	5,000	Asbestos.
				862,362	Unapportioned, 1901-1902.
[2]24,322	25,864	203,783	60 tons	6,000	Asbestos.
[2]10,000	12,100	242,773	200 tons	20,000	Asbestos.
			125 tons	500	Asbestos.
		218,951	300 tons	3,300	Magnesite.
			90 tons	584	Mineral paint.
[3]222,595	200,000	231,415	50 tons	500	Magnesite.
			1,000 tons	2,000	Glass sand.
		205,749	805 lbs.	35	Lead.
			2,000 tons	4,000	Quartz.
[3]202,575	202,575	203,593	385 lbs.	15	Lead.
[3]1,236	2,432	98,187	711 lbs.	33	Lead.
				346,810	Asbestos and copper.
			744 tons	11,956	Chromite.
		17,026		80,931	Granite
				10,548	Lead, limestone, magnesite.
			4,287 tons	105,384	Chromite.
		10,727		30,392	Granite.
				92,624	Asbestos, brick, platinum, tile, gems, magnesite.
			4,963 tons	276,765	Chromite.
		4,266		30,882	Granite.
				21,360	Magnesite and silica.
			1,018 tons	24,000	Chromite.
		4,330		98,513	Clay and clay products.
				36,233	Granite.
				1,055	Other minerals.
			300 tons	7,985	Chromite.
		6,688		212,625	Granite.
				5,825	Other minerals.

[2] Barrels of lime.
[3] Tons of limestone.
[4] See under 'Unapportioned.'

Year	Gold, value	Silver, value	Copper		Brick		Pottery clay†	
			Pounds	Value	M	Value	Tons	Value
1921	$132,468	$1,068	----------	----------	and tile	$144,508	76,665	$95,93(
1922	119,673	952	----------	----------	and tile	118,797	79,531	111,16(
1923	75,732	297	----------	----------	----------	----------	82,919	143,097
1924	108,757	534	----------	----------	and tile	186,053	97,670	146,50(
1925	121,785	620	----------	----------	and tile	147,981	102,598	138,81(
1926	82,921	346	----------	----------	and tile	150,591	104,250	147,241
1927	97,494	440	----------	----------	----------	----------	61,388	106,71(
1928	71,959	338	[3]	----------	[3]	----------	110,353	163,644
1929	34,691	133	----------	----------	[3]	----------	118,704	158,531
1930	29,338	73	[3]	----------	[3]	----------	85,377	116,642
1931	72,409	271	[3]	----------	[3]	----------	78,501	122,515
1932	104,089	284	[3]	----------	[3]	----------	35,825	49,037
1933	167,774	475	[3]	----------	[3]	----------	40,658	59,261
1934	547,892	6,987	[3]	----------	[3]	----------	38,975	60,555
Totals	$34,061,739	$213,690	[3]4,368,895	$957,369	[3]	[3]1,339,550	1,876,883	$2,291,911

† Figures for value of clay are for crude clay only. The annual value of clay products is several times greater, but is omitte because there is only one factory. Production began in 1875.

[1] Includes granite (prior to 1916), crushed rock, rubble, rip-rap, paving blocks, sand, gravel.
[2] Barrels of lime.
[3] Tons of limestone.
[4] See under 'Unapportioned.'
[5] Includes chromite, mineral paint, mineral water.
[6] Includes brick, building tile, chromite.
[7] Includes mineral paint, mineral water, silica (quartz).
[8] Includes chromite, copper, silica (quartz).

PLACER COUNTY, 1880-1934—Continued

Lime and limestone		Miscellaneous stone,[1] value	Miscellaneous and unapportioned		
Amount	Value		Amount	Value	Substance
		$21,490		$48,328	Granite.
				5,278	Chromite, mineral paint, silica.
		24,430		12,980	Granite.
			2,000 tons	5,500	Silica.
				12,477	Other minerals.[5]
		139,829		5,146	Granite.
			3,656 tons	10,040	Silica (quartz).
				120,372	Other minerals.[6]
		15,573		19,155	Granite.
				15,600	Other minerals.[7]
		117,990		14,929	Granite.
				8,295	Other minerals.[8]
		81,814	6,092 cu. ft.	11,969	Granite.
				6,000	Other minerals.
			8,590 cu. ft.	18,109	Granite.
		40,357	2,700 tons	8,100	Silica.
				89,014	Other minerals.
		23,096	12,370 cu. ft.	19,655	Granite.
				54,443	Brick and hollow building tile, copper, mineral paint, mineral water.
		9,469		20,385	Granite.
				43,136	Brick and hollow building tile, mineral paint, silica.
		133,339	9,246 cu. ft.	15,841	Granite.
				28,484	Brick and hollow building tile, chromite, copper, mineral paint, silica.
		55,666		6,300	Granite.
				28,687	Brick and hollow building tile, chromite, copper, mineral paint, mineral water, silica.
		40,405	6,450 cu. ft.	22,625	Granite.
				23,808	Brick and hollow building tile, copper, mineral water.
		41,761		24,595	Brick, chromite, copper, granite, lead, mineral water.
		33,413		29,385	Brick, copper, granite, lead, mineral water, chromite.
	$569,566	$3,706,889		$3,306,524	

Year	Copper		Gold, value	Silver, value
	Pounds	Value		
1880			$857,124	$181
1881			1,350,000	2,000
1882			1,250,000	
1883			950,000	
1884			900,000	
1885			840,308	
1886			834,452	62
1887			698,069	16
1888			650,000	250
1889			796,754	235
1890			490,664	811
1891			482,462	
1892			432,295	11,731
1893			362,488	14
1894			499,359	
1895			602,951	271
1896			462,527	83
1897			339,252	701
1898			369,609	
1899			381,151	15
1900			365,210	4,159
1901			401,287	2,508
1902			360,686	517
1903	1,900	$247	424,112	510
1904			270,439	464
1905	1,006	157	283,810	530
1906			229,350	1,055
1907			219,355	948
1908			254,737	3,560
1909			157,491	587
1910			187,207	1,038
1911			228,785	1,125
1912	6,963	1,149	193,237	957
1913	[3]19,533	3,028	138,368	705
1914	[3]169,089	22,489	140,000	2,900
1915	3,164,496	553,787	167,440	19,025
1916	4,932,928	1,213,500	133,385	46,542
1917	7,462,870	2,037,364	131,955	74,461
1918	11,098,016	2,741,210	125,207	156,750
1919	10,193,951	1,896,075	83,600	175,846
1920	9,583,834	1,763,425	102,097	153,373
1921	11,584,216	1,494,364	127,148	171,090
1922	20,677,771	2,791,499	223,025	297,254
1923	22,883,609	3,363,891	174,871	243,970
1924	25,557,362	3,348,015	277,571	247,569
1925	26,950,029	3,826,904	249,540	294,254
1926	22,163,035	3,102,825	247,667	216,620
1927	21,055,425	3,758,261	321,016	179,108
1928	21,141,121	3,044,321	332,634	191,134
1929	25,253,603	4,444,634	391,683	271,712
1930	19,529,224	2,538,799	405,359	164,025
1931	12,473,960	1,135,130	308,443	93,472
1932	1,043,390	65,734	76,781	8,180
1933	[2]		70,000	402
1934	773	59	153,056	718
Totals	[2]276,948,104	$43,146,867	$21,526,017	$3,043,438

[1] Includes crushed rock, rubble, rip-rap, sand, gravel.
[2] See under 'Unapportioned.'
[3] Includes copper erroneously credited to Lassen County in those years, on account of shipping point being Doyle, though the mines were located in Plumas County.

PLUMAS COUNTY, 1880-1934

Manganese		Miscellaneous stone,[1] value	Miscellaneous and unapportioned		
Tons	Value		Amount	Value	Substance
1	$10				
2	40				
1	25				
1	30			$25	Platinum.
1	25	$5,000			
1	25				
3	75	2,000		75,575	Unapportioned, 1900-1909.
5	75	12,500	1,115 lbs.	50	Lead.
2	40		1,329 lbs.	60	Lead.
2	40	1,350	5,856 lbs.	264	Lead.
		1,700	5,621 lbs.	247	Lead.
		1,879	2,058 lbs.	80	Lead.
		5,431		32	Other minerals.
		1,988		3,920	Chromite, granite, molybdenum.
1,540	39,680	1,322	473 tons	9,800	Chromite.
				304	Gems, granite, silica.
1,544	61,754	7,750		23	Other minerals.
[2]		850		1,825	Limestone, manganese.
		62,109		2,658	Granite, lead, lime, platinum.
			2,961 lbs.	133	Lead.
		[2]	18 fine oz.	1,615	Platinum.
				4,111	Granite and miscellaneous stone.
				2,720	Granite, platinum, miscellaneous stone.
		780		750	Other minerals.
				2,950	Chromite, granite.
				30,810	Chromite, granite, manganese ore, miscellaneous stone.
				5,516	Granite, lead, manganese ore, platinum.
				2,338	Granite, lead, lime.
		28,124		2,914	Granite, lead, manganese.
		80,420		3,520	Granite, lead, manganese.
		106,900	491 lbs.	25	Lead.
				4,792	Granite and manganese.
		20,250		2,001	Granite and lead.
		20,000		10,617	Barytes, granite, platinum.
		51,125		9,623	Barytes, copper, granite, lead.
		[2]	1,111 lbs.	110	Lead.
		[2]		27,200	Barite, granite, miscellaneous stone.
[2]2,103	$101,819	[2]$411,478		$206,605	

Year	Gold, value	Silver, value	Platinum		Brick	
			Ounces	Value	M	Value
1880	$342,514					
1881	425,000	$1,000				
1882	400,000					
1883	480,000					
1884	270,000					
1885	353,522					
1886	280,000					
1887	158,526	176				
1888	150,000					
1889	210,075					
1890	193,585					
1891	142,830	4				
1892	121,900					
1893	90,091					
1894	70,326				11,250	$56,250
1895	145,873				13,125	65,625
1896	133,050				8,700	44,200
1897	93,050				3,100	16,700
1898	57,301				11,000	44,000
1899	115,906				15,600	93,600
1900	176,007	[2]473			8,900	53,400
1901	229,034	[2]253			12,236	62,180
1902	425,894	330			10,492	78,198
1903	335,646	234			15,000	120,000
1904	419,287	75			4,500	20,000
1905	668,382	206	40	$700	18,000	130,000
1906	986,624	3,640	11	200	12,000	108,000
1907	790,973	2,034			16,078	128,624
1908	1,166,055	1,621			7,936	63,491
1909	1,669,814	2,856				
1910	1,396,874	4,606				
1911	1,812,826	3,047			13,017	76,571
1912	1,712,587	3,544			26,073	161,535
1913	2,503,633	3,406			22,535	144,191
1914	2,164,491	3,481	223	7,108	22,862	160,923
1915	2,131,813	3,151	196	6,217	9,920	82,973
1916	1,833,855	3,578	195	8,892	8,924	91,615
1917	1,919,581	4,487	157	12,453	and tile	122,886
1918	1,694,724	4,637	[3]			79,312
1919	1,714,,193	5,276	[3]		[3]	
1920	1,575,033	4,534	[3]			248,433
1921	1,690,662	5,254	[3]			216,402
1922	1,350,749	3,392				259,263
1923	1,331,227	2,566	[3]			327,636
1924	1,150,687	1,753				290,213
1925	1,302,320	1,920				354,078
1926	1,304,046	1,627				388,697
1927	1,211,278	1,472				295,677
1928	1,558,173	1,779	[3]			295,669
1929	1,492,083	1,583	[3]			228,312
1930	1,724,712	1,313	[3]			195,807
1931	1,871,195	1,056	144	5,876		151,539
1932	2,100,250	1,120	[3]			85,187
1933	2,996,669	1,768	[3]			75,081
1934	3,555,468	2,940	[3]			40,572
Totals	$56,200,394	$86,192	[3]1,026	$41,446		$5,461,840

[1] Includes crushed rock, rubble, rip-rap, sand, gravel, paving blocks.
[2] Recalculated to 'commercial' from 'coining value' as originally published.
[3] See under 'Unapportioned.'
[4] State Prison use, value estimated, as none reported.

SACRAMENTO COUNTY, 1880-1934

Granite		Natural gas		Miscellaneous stone,[1] value	Miscellaneous and unapportioned		
Cubic feet	Value	M cubic feet	Value		Amount	Value	Substance
75,000	[4]$35,000						
85,000	[4]45,000						
				$12,108			
207,845	62,339			28,074		$1,500	Pottery clay.
4,840	4,000	15,000	$12,000	14,137			
1,524	1,145	12,000	10,000	13,105			
2,137	3,139	11,750	11,750	14,157			
2,635	2,882			7,926		316	Copper.
288	136	38,550	31,200	19,380			
20,471	2,222	31,680	30,518	18,176			
5,164	4,458	39,200	39,200	22,103			
4,327	1,614	43,564	43,564	32,386			
10,905	1,779	60,225	52,874	18,141			
26,105	4,625	60,225	52,874	13,936			
44,151	44,151	55,000	55,000	151,477			
31,660	23,745	60,000	60,000	235,210		314,438	Unapportioned, 1900-1909.
68,684	59,947	49,203	49,203	164,592			
45,630	2,307	9,000	83,890	131,037			
		100,000	96,000	197,733			
		72,000	36,000	238,476			
		80,000	40,000	253,235			
		108,000	54,000	284,127			
		[3]		194,718	227 lbs.	16	Lead.
						46,000	Pottery clay, natural gas.
		[3]		199,839		27,000	Other minerals.
					310 tons	410	Pottery clay.
		[3]		262,689		61,235	Natural gas, platinum, potash.
		[3]		276,732		113,000	Clay and clay products.
						61,395	Natural gas and platinum.
		[3]		180,563		57,591	Natural gas and platinum.
39,469		[3]		386,911		56,196	Natural gas and platinum.
51,500				412,667		111,991	Natural gas and platinum.
30,740		[3]		649,939		93,907	Natural gas and platinum.
11,150		[3]		639,811	1,750 tons	4,470	Clay (pottery).
						98,126	Natural gas, platinum.
155,250		[3]		590,359		2,748	Clay (pottery).
						97,730	Natural gas, platinum.
7,812		[3]		438,086	1,528 tons	2,310	Clay (pottery).
						101,374	Natural gas, platinum.
33,600		[3]		754,206		52,683	Clay (pottery), natural gas, platinum.
19,658		[3]		453,775		60,591	Clay (pottery), natural gas, platinum.
6,726		[3]		463,930		54,713	Clay (pottery), lead, natural gas, platinum.
7,751		[3]		346,195		27,330	Clay (pottery), natural gas, platinum.
12,316		[3]		205,347		12,345	Clay (pottery), lead, natural gas.
		[3]		135,544		17,822	Clay (pottery), natural gas, platinum.
		[3]		82,602		16,643	Copper, lead, natural gas, platinum.
	[2]	[3]		233,294		45,483	Copper, lead, granite, natural gas, platinum, paving blocks.
	$674,461	[3]926,397	$758,073	$8,776,633		$1,539,363	

Year	Quicksilver		Lime		Gypsum	
	Flasks	Value	Barrels	Value	Tons	Value
1865	[2]17,455	$943,617				
1866	6,525	346,673				
1876	11,493	527,529				
1868	12,180	559,062				
1869	10,315	473,459				
1870	9,888	567,373				
1871	8,180	516,158				
1872	8,171	538,714				
1873	7,735	621,353				
1874	6,911	726,899				
1875	8,432	709,553				
1876	7,272 [3]2,000	319,968 139,000				
1877	6,316	235,587				
1878	5,138	169,040				
1879	4,425	132,048				
1880	3,209	99,479				
1881	2,775	82,778				
1882	1,953	55,123				
1883	1,606	46,173				
1884	1,025	31,263				
1885	1,144	35,178				
1886	1,406	49,913				
1887	1,890	80,088				
1888	1,320	56,100				
1889	980	44,100				
1890	977	51,293				
1891	792	35,838				
1892	848	34,523				
1893	869	31,936				
1894	1,005	30,861	40,000	$44,000	762	$9,144
1895	1,100	36,000	41,000	41,000	750	8,250
1896	1,335	46,725	40,000	35,000	300	3,000
1897	3,605	135,185	25,000	18,500	300	2,000
1898	5,000	190,000			500	4,500
1899	4,780	245,000	16,600	18,675	100	700
1900	3,990	180,000	7,300	8,800		
1901	4,800	242,300				
1902	7,291	306,081				
1903	8,180	344,251				
1904	[5]8,480	314,000				
1905	7,764	279,651	15,000	15,000		
1906	7,203	262,909				
1907	7,675	292,878	8,453	8,453		
1908	9,600	405,792			2,000	8,000
1909	8,900	440,241			6,000	34,576
1910	10,800	488,700			12,000	50,000
1911	9,775	449,748			10,000	30,625
1912	9,743	409,596			8,000	32,000
1913	9,719	390,995			11,000	35,000
1914	6,633	325,349			7,000	21,000
1915	6,291	475,370				
1916	11,100	1,032,156				
1917	11,150	1,057,770				
1918	10,715	1,234,027				
1919	7,409	668,989				
1920	3,887	296,942				
1921	[6]					

[1] Includes crushed rock, rubble, rip-rap, sand, gravel.
[2] Production of New Idria Mine from 1858-1866; yearly details not obtainable, though New Idria began operation in 1850.
[3] Estimated output of Cerro Bonito, Monterey and Stayton mines, 1870-1877; yearly details concealed under heading of 'various mines' in early reports.
[4] Includes bituminous rock.
[5] Flasks of 76½ pounds previous to June, 1904; of 75 pounds thence, through 1927; of 76 pounds since January, 1928.
[6] See under 'Unapportioned.'

SAN BENITO COUNTY, 1865-1934

Mineral water		Miscellaneous stone,[1] value	Miscellaneous and unapportioned		
Gallons	Value		Amount	Value	Substance
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-----	-----	-----	-----	-----	
-----	-----	-----	58 tons	$2,280	Antimony
-----	-----	$19,000	-----	-----	
5,000	$300	6,000	2 tons	70	Antimony.
500	100	2,638	-----	-----	
900	450	[4]17,500	45 tons	135	Coal.
1,000	500	[4]25,240	19 tons	380	Asphalt.
10,000	3,750	13,000	100 tons	100	Limestone.
500	125	[4]12,794	-----	-----	
600	150	22,000	-----	-----	
10,000	400	23,200	-----	-----	
-----	-----	16,500	206 tons	2,472	Asphalt.
500	500	64,994	-----	-----	
2,600	3,120	23,000	-----	-----	
26,000	2,600	48,661	-----	-----	
26,000	2,600	63,220	-----	16,500	Gems.
3,120	1,560	83,709	-----	130,000	Unapportioned, 1900-1909.
3,500	1,400	94,243	-----	-----	
3,600	1,540	107,558	-----	-----	
26,000	1,240	83,232	-----	-----	
7,000	4,500	119,500	-----	-----	
700	280	110,630	-----	-----	
1,200	300	155,000	260 M 2,500 tons -----	1,560 9,500 335	Brick. Dolomite. Other minerals.
[6]	-----	155,250	8,100 tons -----	25,515 526	Dolomite. Antimony and mineral water.
[6]	-----	101,148	----- 7,000 tons	59,245 15,000	Antimony, chromite, magnesite, mineral water. Dolomite.
[6]	-----	103,295	130 tons 5,000 tons 5,340 tons -----	7,000 20,625 48,060 124,456	Chromite. Dolomite. Magnesite. Cement, manganese, mineral water.
[6]	-----	164,300	7,000 tons -----	24,500 418,687	Dolomite. Cement, magnesite, mineral water.
	-----	207,250	18,000 tons -----	57,750 921,082	Dolomite. Cement, magnesite, mineral water.
	-----	269,334	-----	1,116,759	Asbestos, cement, dolomite, magnesite, mineral water, quicksilver.

Year	Quicksilver		Lime		Gypsum	
	Flasks	Value	Barrels	Value	Tons	Value
1922	[6]					
1923	[6]					
1924	4,670	$320,758				
1925	6,085	486,797				
1926	[6]					
1927	4,380	485,409				
1928	3,800	452,345				
1929	[6]					
1930	[6]		[6]			
1931	4,120	349,619	[6]			
1932	594	31,036	[6]			
1933	711	38,765				
1934	746	52,699				
Totals	[6]366,276	$21,058,762	[6]193,353	$189,428	58,712	$238,795

[1] Includes crushed rock, rubble, rip-rap, sand, gravel.
[6] See under 'Unapportioned.'

SAN BENITO COUNTY, 1865-1934—Continued

Mineral water		Miscellaneous stone,[1] value	Miscellaneous and unapportioned		
Gallons	Value		Amount	Value	Substance
			6,650 tons	$30,100	Dolomite.
[6]		$259,805		1,504,343	Asbestos, cement, magnesite, mineral water, quicksilver.
[6]		424,854		1,853,049	Asbestos, cement, dolomite, magnesite, mineral water, quicksilver.
[6]		269,369		1,554,476	Asbestos, cement, coal, dolomite, magnesite, mineral water.
		351,363		1,779,236	Asbestos, cement, dolomite, magnesite, mineral water.
		328,460		2,072,390	Antimony, asbestos, cement, dolomite, magnesite, mineral water, quicksilver.
		371,050		1,045,395	Antimony, asbestos, cement, mineral water, pyrite.
[6]		[6]		1,202,373	Cement, magnesite, mineral water, pyrite, miscellaneous stone.
		[6]		1,908,462	Cement, magnesite, quicksilver, miscellaneous stone.
		[6]		1,389,490	Cement, lime, magnesite, quicksilver, miscellaneous stone.
		[6]		304,665	Bentonite, gems (benitoite), lime, limestone, miscellaneous atone.
		142,638		26,250	Bentonite, limestone.
		[6]		208,714	Other minerals.
		[6]		214,158	Bentonite and miscellaneous stone.
[6]128,720	$25,415	[6]$4,259,735		$18,095,638	

MINERAL PRODUCTION OF

Year	Gold, value	Silver, value	Brick		Gems, value	Granite, value	Mineral water	
			M	Value			Gallons	Value
1880	$81,558							
1881	60,000							
1882	100,000							
1883	50,000	$5,000						
1884	65,000	5,000						
1885	95,125	2,000						
1886	140,450	78,758						
1887	66,900	198,537						
1888	160,000	192,000						
1889	275,440	25,740						
1890	453,800	100						
1891	467,000							
1892	396,518	2,051						
1893	105,860							
1894	266,409	190						
1895	344,308	600					48,000	$11,500
1896	560,578	40					45,000	35,000
1897	592,328						25,000	5,000
1898	673,196	300	672	$2,688		$4,875	4,320	3,000
1899	333,650		860	4,300		8,150	12,000	6,000
1900	335,937	[2]9,500	734	3,261	$500	9,900	6,500	3,250
1901	413,320	[2]2,800	1,158	5,791	20,000	22,400	6,000	3,000
1902	338,877	1,994	688	3,440	150,000	13,175	5,158	1,289
1903	461,516	1,444	2,150	11,150	100,000	16,308	6,000	3,000
1904	334,697	100	3,824	23,700	136,000	7,851		
1905	109,712	100	3,190	28,350	66,000	10,250		
1906	[3]		3,950	34,900	284,500	10,250		
1907	7,455	35	4,474	36,430	206,336	23,650	2,000	2,000
1908	6,920	86	2,112	16,719	121,500	10,000	9,810	11,772
1909	12,812	1,721	5,844	38,946	125,000		10,210	12,022
1910	[4]		8,813	62,647	110,300		40,550	30,110
1911	[4]		9,500	68,000	25,000		60,090	87,020
1912			10,500	80,000	12,500		52,060	17,218
1913			9,384	68,400	7,465		41,500	15,225
1914			5,457	56,392	1,150		8,865	911
1915	1,364	9	1,260	21,025	2,465		10,350	1,035
1916			4,001	36,842	2,710	[3]	[3]	
1917		[3]	and	tile 21,423	[3]	[3]	[3]	
1918				29,080		[3]	[3]	
1919	1,470	12		[3]	[3]	15,215	[3]	
1920				87,612	2,100	7,838		
1921	[3]	[3]		[3]	1,405	22,444	70,924	9,161
1922	[3]	[3]			400	35,673	71,781	9,262

[1] Includes crushed rock, rubble, rip-rap, sand, gravel, paving blocks, grinding-mill pebbles.
[2] Recalculated to 'commercial' from 'coining value' as originally published.
[3] See under 'Unapportioned.'
[4] Included under Imperial County production.

SAN DIEGO COUNTY, 1880-1934

Salt		Miscellaneous stone[1], value	Miscellaneous and unapportioned		
Tons	Value		Amount	Value	Substance
700	$5,000	$49,374	50 tons	$2,250	Asbestos.
700	5,000	25,000			
600	4,800	3,573			
650	5,850	23,390			
600	5,000	5,359			
			31,000 lbs.	1,317	Lead.
600	5,000	18,198	124 tons	4,600	Lithia mica.
600	4,000	14,403	440 tons	11,000	Lithia mica.
1,050	9,320	3,887	1,100 tons	27,500	Lithia mica.
7,900	7,900	14,175	822 tons	31,880	Lithia mica.
		42,597	700 tons	27,300	Lithia mica.
		200,192	641 tons	25,000	Lithia mica.
			4,808 lbs.	750	Copper.
		16,507	25 tons	276	Lithia mica.
6,000	5,000	49,738			
			13,246 lbs.	2,659	Copper.
7,000	55,000	28,500	971 lbs.	52	Lead.
			4,000 cu. ft.	12,000	Marble.
7,000	60,000	37,122			
15,000	60,000	33,510		214,634	Unapportioned, 1900-1909.
8,000	24,000	147,817			
13,000	37,500	201,488			
12,450	31,350	164,115	403 tons	500	Pottery clay.
20,500	51,750	170,014	838 tons	2,840	Pottery clay.
15,300	46,200	210,250	30 lbs.	4	Copper.
				1,365	Other minerals.
17,616	19,616	163,723	3,008 lbs.	526	Copper.
			23 lbs.	1	Lead.
			2,150 tons	175,804	Potash.
[3]		163,925	16,806 lbs.	4,134	Copper.
				13,140	Granite, lithia, mineral water, salt.
			283 tons	613	Pottery clay.
			153,349 lbs.	43,502	Copper.
4,500	9,750	125,855	5,252 tons	1,492,123	Potash.
				21,055	Pottery clay, gems, granite, lithia, mineral water, molybdenum, silica, silver.
			4,143 lbs.	1,023	Copper.
			700 tons	3,600	Feldspar.
10,631	61,717	184,158	10,392 tons	1,578,874	Potash.
				83,698	Granite, lithia, mineral water.
				62,929	Clay and clay products.
12,400	52,800	141,996		68,790	Copper, gems, lithia, mineral water, potash, silica.
			5,852 tons	57,522	Pottery clay.
15,300	77,100	333,847	2,953 tons	17,715	Feldspar.
			7,557 tons	18,893	Silica (glass sand).
				191,602	Lithia, magnesium salts, mineral water, tantalum ore (columbite).
				92,600	Clay and clay products.
			370 tons	725	Glass sand.
[3]		187,922	1,850 tons	11,100	Feldspar.
				176,036	Gold, lithia, magnesium salts, marble, salt, silver.
			3,500 tons	29,500	Feldspar.
[3]		355,810		93,045	Clay and clay products.
				133,117	Fuller's earth, gold, lithia, magnesium salts, marble, salt, silica, silver.

Year	Gold, value	Silver, value	Brick		Gems, value	Granite, value	Mineral water	
			M	Value			Gallons	Value
1923	$822	$144	[3]	[3]	$8,530	$40,000	59,795	$6,57(
1924	4,830	97		$232,113	1,925	94,006	107,097	8,64
1925	5,134	58		119,165	9,413	108,703	81,374	21,13
1926	10,543	340		230,484	4,000	45,327	156,380	23,25
1927	11,490	92		165,170	3,500	63,142	109,685	51,55
1928	2,671	13		101,515	1,700	41,499	71,845	3,59
1929	1,282	5		146,221	2,210	28,884	[3]	
1930	2,234	10		[3]	[3]	27,411	[3]	
1931	3,988	15		79,633	[3]	10,192	[3]	
1932	5,573	32		[3]	[3]	8,963	[3]	
1933	5,894	24		[3]	[3]	10,097	[3]	
1934	25,514	187		24,506		11,167	[3]	
Totals	$7,392,175	$529,134		[3]$1,839,903	[3]$1,406,609	$707,970	[3]1,121,294	$381,48

[1] Includes crushed rock, rubble, rip-rap, sand, gravel, paving blocks, grinding-mill pebbles.
[3] See under 'Unapportioned.'
[5] Includes bromine, lithia, magnesium chloride, salt, silica.
[6] Includes bromine, feldspar, magnesium chloride, mineral water, salt, silica, tube-mill pebbles.
[7] Includes brick and hollow building tile, bromine, feldspar, gems, magnesium chloride, mineral water, salt, silica (quartz) tube-mill pebbles.
[8] Includes bromine, gems, magnesium chloride, mineral water, salt, silica (quartz), tube-mill pebbles, paving blocks.
[9] Includes bentonite, brick and hollow building tile, bromine, clay (pottery), feldspar, gems, magnesium chloride, minera water, salt, silica (quartz), tube-mill pebbles.
[10] Includes brick and hollow building tile, bromine, clay (pottery), feldspar, grinding-mill pebbles, magnesium chloride mineral water, salt, silica (quartz).
[11] Includes bromine, clay (pottery), copper, feldspar, magnesium chloride, mineral water, salt, silica (quartz), tube-mill pebbles

AN DIEGO COUNTY, 1880-1934—Continued

Salt		Miscellaneous stone[1], value	Miscellaneous and unapportioned		
Tons	Value		Amount	Value	Substance
			5,603 tons	$100,977	Pottery clay.
		$343,959	6,100 tons	42,800	Feldspar.
				277,394	Brick and tile, fuller's earth, lead, magnesium, chloride, marble, salt, silica (quartz).
			12,783 tons	36,941	Pottery clay.
[3]		379,094	6,850 tons	47,950	Feldspar.
			109 tons	2,269	Lithia.
				205,252	Arsenic, fuller's earth, magnesium chloride, salt.
[3]		508,538	26,976 tons	66,427	Clay (pottery).
				291,182	Feldspar, fuller's earth, lime, magnesium chloride, salt, silica.
			30,187 tons	58,269	Clay (pottery).
[3]		529,640	7,000 tons	54,000	Feldspar.
				258,462	Bromine, copper, fuller's earth (filtering clay), lead, lithia, magnesium chloride, salt, zinc.
			16,190 tons	31,765	Clay (pottery).
[3]		889,642	7,396 tons	69,661	Fuller's earth.
				333,410	Bromine, feldspar, lithia, magnesium chloride, paving blocks, salt, heptane.
			33,396 tons	63,898	Clay (pottery).
[3]		1,284,741	12,836 tons	82,255	Feldspar.
			5,488 tons	47,740	Fuller's earth.
				140,629	Other minerals.[5]
			20,148 tons	34,020	Clay (pottery).
[3]		777,481	8,414 tons	78,944	Fuller's earth.
				378,240	Other minerals.[6]
			15,517 tons	25,785	Clay (pottery).
[3]		651,926	5,297 tons	55,696	Fuller's earth.
				539,985	Other minerals.[7]
			6,416 tons	69,010	Bentonite (fuller's earth).
[4]		411,004	11,421 tons	15,487	Clay (pottery).
			4,165 tons	54,620	Feldspar.
				208,507	Other minerals.[8]
[3]		187,671		172,937	Other minerals.[9]
[3]		374,796		230,070	Other minerals.[10]
[3]		212,884		213,008	Other minerals.[11]
[3]178,107	$643,953	$9,600,821		$9,035,183	

MINERAL PRODUCTION OF SAN FRANCISCO COUNTY, 1894-1934

Year	Brick		Miscellaneous stone[1], value	Miscellaneous and unapportioned		
	M	Value		Amount	Value	Substance
1894			$296,864	20 tons	$25	Limestone.
1895			379,696			
1896	5,000	$37,500	285,167			
1897	4,500	28,500	86,217			
1898			129,595			
1899			275,604			
1900			58,400			
1901			156,947			
1902	25,800	238,800	156,300			
1903	33,403	294,326	508,460			
1904	39,509	367,911	332,220			
1905	32,585	310,685	114,357			
1906	7,208	58,289	106,250	8,500 tons	$10,500	Glass sand.
1907	44,578	434,140	97,273	4,000 tons	60,000	Asphalt.
1908	41,837	345,155	95,259	1,500 tons	15,000	Asphalt.
1909	31,430	221,332	150,382	850 tons	9,800	Asphalt.
					30,000	Unapportioned, 1900-1909
1910			108,126	1,000 tons	12,000	Asphaltum.
1911			119,636			
1912			151,147			
1913			110,551			
1914			119,889			
1915			128,270			
1916			76,437			
1917			107,957			
1918			16,463			
1919			65,541			
1920			77,553		2,800	Other minerals.
1921			41,562			
1922			[2]		65,409	Pumice, miscellaneous stone
1923			117,341			
1924			150,258			
1925			131,158			
1926			112,193			
1927			62,701			
1928			67,430			
1929			75,245			
1930			23,482			
1931			[2]		20,500	Miscellaneous stone, mineral water.
1932			[2]		3,903	Miscellaneous stone, mineral water.
1933			[2]		7,734	Miscellaneous stone, mineral water.
1934			[2]		28,641	Miscellaneous stone, mineral water.
Totals	265,850	$2,336,638	[2]$5,092,020		$266,287	

[1] Includes crushed rock, rubble, sand, gravel.
[2] See under 'Unapportioned.'

MINERAL PRODUCTION OF SAN BERNARDINO COUNTY, 1880-1934

Year	Gold, value	Silver, value	Copper		Lead		Borates, value	Gypsum		Salt		Cement		Lime		Limestone		Brick		Marble		Miscellaneous stone,[1] value	Gems, value	Miscellaneous and unapportioned		
			Pounds	Value	Pounds	Value		Tons	Value	Tons	Value	Barrels	Value	Barrels	Value	Tons	Value	M	Value	Cubic feet	Value			Amount	Value	Substance
1880																										
1881	$9,000	$100,000																								
1882	20,000	150,000																								
1883	30,000	1,050,000																								
1884	32,000	2,560,000																								
1885	23,000	2,363,426																								
1886	56,464	1,204,750																								
1887	27,850	1,133,268																								
1888	25,000	1,200,000																								
1889	10,737	621,820																								
1890	17,335	795,465																								
1891	62,970	711,157																								
1892	47,037	67,022																								
1893	158,000	447,020								1,000	$3,000	8,000	$21,600	40,000	$32,000	5,000	$6,250					$31,622				
1894	130,420	148,243					$736,800			3,841	20,191	16,283	32,566	57,664	87,674	30,000	30,000					37,672				
1895	151,360	219,410					555,000			3,000	15,000	9,000	27,000	37,427	34,977	17,500	17,500			500	$3,000	28,476				
1896	96,723	130,714					650,500					18,000	66,000	12,000	12,000											
1897	100,373	54,407					1,080,000					50,000	150,000	50,000	35,000	5,000	5,000	2,000	$16,800	1,200	8,000	15,040				
1898	261,512	32,000					1,120,000					60,000	180,000	16,000	16,100	16,440	14,810	1,000	8,000	4,500	625	11,275				
1899	164,599	125,663	1,369,678	$232,339			1,100,000					52,000	121,000	26,261	33,261	7,067	7,067					65,757	$20,000			
1900	247,949	172,759	1,920,000	297,600	10,000	$400	999,340					71,600	159,842	38,753	43,028	54,210	76,710					166,777	20,000			
1901	306,693	57,164	50,000	7,875	800	20	898,130					95,000	273,600	76,582	65,832	48,986	54,578	60	1,800	6,005	15,600	192,400	11,000			
1902	394,536	58,972	338,480	41,005	59,340	2,076	2,198,000					100,000	157,000	39,923	28,692	52,813	64,613	100	9,000	38,000	41,800	265,961	10,000			
1903	381,197	59,199	60,400	7,852	14,000	304	495,000							25,000	21,500	28,421	42,575	2,500	17,500	31,116	53,400	158,606		4,000 cu. ft.	$2,000	Sandstone.
1904	595,828	13,025	169,477	17,270										17,024	14,740	27,387	51,395			40,100	40,000	147,197	65,000			
1905	473,893	19,595	52,603	8,206										20,910	17,146	19,837	35,900	1,800	13,500	7,200	25,000	38,474		10 tons	5,500	Tungsten.
1906	354,830	33,765	514,931	99,207										8,600	8,600	74,709	139,184	1,665	15,555	8,482	29,940	147,942				
1907	158,576	81,339	514,252	102,886	34,211	1,822										104,236	97,486	1,050	7,350	150	500	231,242	200			
1908	180,511	35,704	516,940	71,079	409,576	17,218		20,000	$70,000	90	650					22,197	41,395	1,709	11,966	50,000	125,000	173,777	200	300 tons	3,000	Pottery clay.
1909	40,071	12,570	316,300	40,418	310,200	13,254		12,500	44,000	3,500	14,000														4,035,856	Unapportioned, 1906-1909
1910	55,093	10,164	5,412	689	134,312	5,972		31,519	70,357	3,000	9,600					224,610	157,715	1,910	11,460			95,126	1,129	430 tons	4,300	Pottery clay.
1911	127,367	35,542	666,489	83,311	161,338	7,260		20,584	66,505	3,600	13,800					345,102	177,080			135	405	167,213		108,000 gals.	35,000	Mineral water.
1912	293,900	49,952	1,937,185	319,636	94,852	4,268		21,000	67,000	3,600	12,600	2,361,000	2,006,200			80,186	97,867	1,340	8,040			580,824	450	60 tons	540	Barytes.
1913	356,324	44,413	497,852	77,167	279,241	12,257		25,000	74,000	3,049	10,573			121,544	113,856	25,896	35,464	350	2,100			364,312	550	100 tons	1,000	Pottery clay.
1914	295,000	40,000	19,069	2,536	45,110	1,759		17,332	40,150	482	2,892			84,637	93,100	23,005	20,880	25	1,250			131,978		350 tons	350	Mineral paint, soapstone, and talc.
																								200 tons	1,200	Granite.
																								4,500 gals.	2,000	Mineral water.
																								4,100 gals.	5,100	Other minerals
																								80 tons	561	Mineral water.
																								140 tons	490	Mineral paint.
																										Glass sand.
1915	416,967	64,165	209,440	36,652	169,183	7,952				542	3,324	915,000	980,000			68,500	68,500	400	2,400			178,526		37,480 gals	7,350	Mineral water
																								864 tons	840,047	Tungsten concentrates
																								39,848 lbs	4,941	Zinc.
																									62,316	Dolomite, gypsum, lime, manganese, marble, mineral paint, soapstone, and talc.
																								7,500 cu. ft.	2,500	Granite.
																								40,500 gals.	6,500	Mineral water.
1916	279,813	67,140	1,577,901	388,164	673,801	46,492				2,335	13,830	1,036,000	1,240,000	151,670	54,317	65,174	63,486					172,454	1,000	1,921 tons	3,915,434	Tungsten concentrates.
																								707,062 lbs	94,746	Zinc.
																									217,265	Brick, dolomite, feldspar, gypsum, manganese, mineral paint, pumice, potash, talc, strontium
																									2,350	Granite.
																									187,571	Lime and limestone.
																									6,050	Manganese.
																									1,620	Mineral water
1917	154,976	88,930	1,220,356	333,157	2,293,341	197,245						1,323,931	1,672,054									111,158		11,370 gals	1,706	Mineral water
																								14,570 tons	2,049,120	Potash.
																								3,050 tons	37,000	Strontium.
																								1,945 tons	2,447,326	Tungsten concentrates.
																								38,735 lbs.	3,951	Zinc.
																									114,834	Brick, pottery clay, dolomite, feldspar, gems, gypsum, iron ore, mineral paint, salt, soda, talc
																								270 tons	810	Dolomite
																								501,500 gals	60,150	Mineral water
																								27,345 tons	3,420,625	Potash.
																								400 tons	4,210	Talc.
																								2,000 tons	33,000	Strontium.
																								1,341 tons	1,913,996	Tungsten concentrates
																								2,824 lbs	257	Zinc.
																									122,348	Gems, granite, gypsum, iron ore, lime, magnesite, marble, mineral paint, salt
																								800,000 gals.	32,000	Mineral water.
1919	39,769	427,747	256,933	47,790	105,796	5,667		19,613	59,154			1,078,943	1,717,998									184,388		21,171 tons	1,670,919	Potash.
																								3,661 tons	19,845	Talc.
																									449,402	Borax, pottery clay, dolomite, gems, lime, tungsten
																								95 tons	800	Pottery clay.
1920	79,195	1,212,987	5,346	991	115,876	9,270	440,411			202	1,220	1,681,283	3,051,079									169,991		1,110,140 gals	156,726	Mineral water.
																								15,435 tons	1,062,037	Potash.
																									336,551	Dolomite, gems, granite, gypsum, iron ore, lime, limestone, soda, talc.
																								683 tons	22,980	Calcium chloride.
1921	217,368	3,210,706	17,054	2,200	22,812	1,027	338,905			13,279	67,782	1,964,926	4,633,437			21,462	102,195					145,572		7,202 tons	211,067	Potash.
																								2,750 tons	43,375	Talc.
																									374,726	Pottery clay, dolomite, feldspar, gems, granite, gypsum, iron ore, lime, mineral water, petroleum, potash, soda (trona), tungsten, concentrates
1922	125,728	2,374,918	13,452	1,816	11,188	615				12,222	54,249	2,770,953	4,156,430			2,200	7,800								1,826,304	Borax, calcium chloride, fuller's earth, gems, gypsum, lime, mineral water, potash, soda, talc, miscellaneous stone.
1923	210,923	2,225,959	13,328	1,959	34,477	2,413				17,359	65,550	3,554,764	8,478,612			5,859	28,824					351,151		830 tons	12,630	Clay (pottery).
																								7,248 tons	123,216	Talc.
																									2,270,516	Borates, calcium chloride, gems, gypsum, lime, mineral water, potash, soda (trona), tungsten concentrates.
1924	187,573	1,531,598	17,667	2,314	31,888	2,333				29,699	99,791	4,354,119	7,571,370			14,375	45,137					355,940		7,234 tons	125,926	Talc.
																									2,720,241	Borates, calcium chloride, clay (pottery), fuller's earth, gypsum, lime, mineral water, petroleum, potash, soda (trona), tungsten, concentrates
1925	157,374	1,378,392	9,249	888	61,480	5,349				28,319	101,085	5,079,281	8,828,044	17,405	124,446	13,239	27,569					395,048		1,540 tons	11,000	Clay (pottery)
																									3,150,468	Borates, cal sium chloride, fuller's earth, mineral water, petroleum, potash, soda (trona), talc, tungsten, contentrates.
																								2,258 tons	10,605	Clay (pottery).
1926	108,875	551,644	171,232	23,972	195,536	15,643				22,522	85 463	5,135,840	9,273,027	13,680	96,310	11,226	19 504					404,681		2,806 tons	73,721	Soda (trona)
																								8,134 tons	142,280	Talc
																									3,394,150	Borates, calcium chloride, fuller's earth, magnesite, mineral water, petroleum, potash, silica, tungsten concentrates, zinc.
1927	82,225	447,125	197,132	25,824	125,692	7,919						5,557,339	9,823,839	12,170	92,363	550,011	348,484					311 470		1,798 tons	26,603	Fuller's earth
																								9,544 tons	49,400	Talc
																									4,925,551	Borates, calcium chloride, clay (pottery), gems, mineral water, onyx, petroleum, potash, salt, silica, soda (trona), talc, tungsten concentrates
1928	91,717	362,741	106,351	15,314	38,607	2,209				42,244	186,470	4,383,383	7,137,609	14,015	106,312	11,201	40,224					329,541		2,190 tons	13,215	Clay (pottery)
																									5,473,033	Antimony, borates, calcium chloride, fuller's earth, gems, mineral water, potash, soda, talc, and tungsten.
1929	44,984	189,756	61,846	14,405	53,532	3,373				24,949	114 796	3,576,905	4,863,301	10,145	77,340	15,526	40,753					629,111	1,540	2,598 tons	15,874	Clay (pottery).
																									5,474,419	Baryte, borates, calcium chloride, manganese mineral water, potash, volcanic ash, soda, talc, tungsten.
1930	59,442	178,406	40,022	5,281	45,053	2,283																406,912		2,013 tons	14,916	Clay (pottery)
																									9,960,971	Barites, borates, brick, calcium, chloride, cement, fuller's earth, gems, lime, limestone, manganese ore, mineral water, potash, salt, soda, talc, tungsten
1931	54,699	32,453	6,072	553	15,763	585										15,128	56,608					496,240		Beatenite	29,703	
																								1,229 tons	5,333	Pottery clay
																									9,299,304	Barite, borates, brick, calcium chloride, cement, gems, lime, manganese, mineral water, potash, pumice, iron ore, salt, silica (quartz), soda, talc, tungsten.
1932	137,979	50,241	6,183	567	23,371	701										8,019	23,717					197,230		1,196 tons	6,491	Pottery clay.
																									5,626,589	Barite, bentonite, borates, brick, calcium chloride, cement, gems, lime, mineral water, petroleum, potash, salt, soda, talc.
																								275 tons	2,515	Barite.
1933	116,074	33,817	7,871	504	27,936	1,034																145,154		1,678 tons	16,042	Bentonite.
																								780 tons	5,662	Pottery clay.
																								8,531 tons	83,202	Talc.
																									8,569,396	Borates, brick, calcium chloride, cement, fluorspar, lime, limestone, mineral water, petroleum, potash, volcanic ash, salt, soda, tungsten.
1934	301,004	147,597	25,006	2,048	103,497	3,829								39,960	30,846	11,210	29,749					165,037		1,185 tons	7,844	Pottery clay
																									9,548,048	Barite, bentonite, borates, brick, calcium chloride, cement, fluorspar, gems, iron ore, manganese, mineral water, potash, salt, soda, talc, tungsten ore
Totals	$8,564,948	$28,493,638	14,510,077	$2,403,775	6,369,551	$430,345	[3]$10,000,295	[2]167,548	$490,166	[2]218,845	$895,186	[2]46,281,485	$78,812,157	[2]1,569,235	$2,239,440	[2]1,939,185	$2,121,416	[2]15,909	$125,721	[2]385,388	$343,070	$8,249,842	[2]$131,660		$100,424,908	

[1] Includes crushed rock, rubble, rip-rap, sand, gravel
[2] Combined annual production 1910, 1911, 1912
[3] See under "Unapportioned"

Year	Gold, value	Silver, value	Copper		Lead		Borates, value	Gypsum		Salt		Cement		Lime		Limestone		Brick		Marble		Miscellaneous stone,[1] value	Gems, value	Miscellaneous and unapportioned		
			Pounds	Value	Pounds	Value		Tons	Value	Tons	Value	Barrels	Value	Barrels	Value	Tons	Value	M	Value	Cubic feet	Value			Amount	Value	Substance
1880																										
1881	$9,000	$100,000																								
1882	30,000	150,000																								
1883	50,000	1,050,000																								
1884	32,000	2,550,000																								
1885	33,000	2,363,436																								
1886	50,404	1,204,750																								
1887	27,850	1,133,268																								
1888	25,000	1,200,000																								
1889	10,737	621,820																								
1890	17,335	795,465																								
1891	62,970	711,157																								
1892	47,037	67,072																								
1893	158,000	447,020																								
1894	130,420	148,243					$126,500			1,000	$3,000	8,000	$21,600	40,000	$32,000	5,000	$6,250					$31,622				
1895	131,350	210,410					355,000			3,841	20,101	16,283	32,566	57,864	87,674	30,000	30,000					37,673				
1896	95,723	130,714					n50,500			3,000	15,000	9,000	27,000	37,427	34,977	17,500	17,500			500	$3,000	28,476				
1897	100,373	54,407					1,040,000					18,000	66,000	12,000	12,000											
1898	261,542	32,000					1,120,000					50,000	150,000	50,000	25,000	6,600	8,600	2,000	$16,000	1,200	$ 800	15,040				
1899	164,599	125,663	3,369,878	$232,339			1,100,000					90,000	180,000	16,000	16,100	10,440	14,810	1,000	8,000	4,500	825	11,275				
1900	247,949	172,759	1,020,000	297,600	10,000	$400	999,340					52,000	121,000	20,261	33,201	7,067	7,067					65,757	$20,000			
1901	390,693	87,864	50,000	7,875	600	20	896,130					71,800	159,342	38,783	43,028	54,210	76,710					100,277	20,000			
1902	394,936	58,972	338,480	41,006	59,340	2,076	2,198,600					96,000	273,600	76,582	65,832	48,986	51,578	60	1,800	6,005	15,600	192,400	11,600			
1903	381,197	59,199	60,400	7,852	14,000	504	495,000					160,000	157,000	39,023	28,692	52,813	64,613	100	8,000	38,000	41,600	266,961	10,000			
1904	505,828	12,025	169,477	17,270										25,000	21,500	28,821	42,575	2,500	17,500	34,116	53,400	158,096		4,000 cu ft.	$2,000	Sandstone.
1905	473,893	16,505	52,603	8,206										17,024	14,740	27,387	51,395			49,100	40,000	147,197	85,000			
1906	334,830	33,765	514,031	99,207										20,910	17,146	19,837	35,040	1,500	13,500	7,200	25,000	38,476		10 tons	5,500	Tungsten
1907	158,876	81,339	514,282	102,856	34,211	1,822								8,600	8,600	74,709	139,188	1,665	15,555	6,482	29,046	147,342				
1908	180,911	35,704	516,940	71,079	409,570	17,218		20,000	$70,000	90	650					104,236	97,406	1,050	7,350	150	500	231,242	200			
1909	40,071	12,570	316,300	40,418	310,200	13,254		12,500	43,000	3,500	14,000					22,197	41,395	1,709	11,960	50,000	125,000	173,277	200	300 tons	3,000	Pottery clay.
																								430 tons	4,300	Pottery clay.
1910	55,093	10,164	5,412	689	134,312	5,972		31,519	70,357	3,000	9,000					224,610	157,715	1,910	11,460			95,126	1,120	168,000 gals.	25,000	Mineral water
																								60 tons	840	Barytes.
																								100 tons	1,000	Soapstone
1911	127,367	35,542	666,489	83,311	161,338	7,260		20,384	66,505	3,000	13,800					245,102	177,040			135	405	167,213		920 tons	4,000	Pottery clay.
																								350 tons	350	Pottery clay.
1912	293,900	49,962	1,537,185	319,636	94,852	4,268		21,000	67,000	3,600	12,600	2,301,000	2,990,200					1,340	8,040			580,824	450	200 tons	1,200	Mineral paint
1913	356,524	44,413	497,832	77,167	279,241	12,257		25,000	74,000	3,046	10,573	"	"	121,544	113,856	28,896	35,464	350	2,100			364,312	550	50 tons	550	Barytes.
																								4,500 gals.	3,000	Mineral water
																									1,391,304	Other minerals.
1914	205,000	40,000	19,069	2,536	45,110	1,759		17,332	49,150	482	2,892	"	"	84,637	93,100	23,006	29,880	25	1,250			131,978		44,100 gals.	5,100	Mineral water.
																								80 tons	561	Mineral paint.
																								140 tons	400	Glass sand.
																									1,240,575	Other minerals.
1915	416,967	64,166	209,448	36,652	169,183	7,952		"	...	542	3,324	915,000	980,000	"	.....	68,500	68,500	400	2,400	"		178,528		37,480 gals	7,350	Mineral water.
																								864 tons	840,947	Tungsten concentrates
																								39,848 lbs	4,941	Zinc.
																									62,316	Dolomite, gypsum, lime, manganese, marble, mineral paint, soapstone, and talc.
1916	279,813	67,146	1,577,901	388,164	673,801	46,492		"		2,335	13,830	1,036,000	1,246,000	151,070	54,317	65,174	63,480					172,454	1,000	7,500 cu ft	2,500	Granite
																								40,500 gals	6,500	Mineral water
																								1,921 tons	3,935,434	Tungsten concentrates.
																								707,062 lbs	94,746	Zinc.
																									217,265	Brick, dolomite, feldspar, gypsum, manganese, mineral paint, pumice, potash, talc, strontium
																									2,350	Granite.
																									187,571	Lime and limestone.
1917	154,976	88,930	1,220,356	333,157	2,293,541	197,247		"				1,323,931	1,672,054	"		"						111,158		6,050 tons	6,050	Manganese.
																								11,300 gals	1,639	Mineral water.
																								14,570 tons	2,040,120	Potash.
																								3,050 tons	37,000	Strontium.
																								1,943 tons	2,447,726	Tungsten concentrates.
																								38,735 lbs.	3,951	Zinc.
																									114,534	Brick, pottery clay, dolomite, feldspar, gems, gypsum, iron ore, mineral paint, salt, soda, talc
																								270 tons	810	Dolomite.
																								901,500 gals	63,150	Mineral water
																								37,545 tons	3,428,443	Potash.
																								470 tons	4,210	Talc.
1918	29,225	88,712	1,580,998	390,567	667,978	47,426						1,027,635	1,453,962			10,852	13,323					48,451		2,000 tons	33,000	Strontium.
																								1,747 tons	1,911,998	Tungsten concentrates
																								2,824 lbs.	257	Zinc.
																									122,348	Gems, granite, gypsum, iron ore, lime, magnesite, marble, mineral paint, salt
																								800,000 gals.	32,000	Mineral water.
1919	30,709	427,717	256,633	47,790	105,796	5,607	"	19,613	50,154			1,078,943	1,717,998	"								183,388		21,171 tons	1,670,919	Potash.
																								2,601 tons	10,945	Talc.
																									443,492	Borax, pottery clay, dolomite, gems, lime, tungsten.
																								95 tons	800	Pottery clay.
1920	79,195	1,212,987	5,386	991	115,876	9,270	440,411	"		202	1,220	1,681,283	7,051,079	"		"						169,991		1,110,100 gals	156,226	Mineral water.
																								15,435 tons	1,082,037	Potash.
																									336,551	Dolomite, gems, granite, gypsum, iron ore, lime, limestone, soda, talc.
																								683 tons	22,940	Calcium chloride.
1921	217,568	3,240,706	17,054	2,200	22,812	1,027	338,905	"		13,279	67,782	1,904,926	4,633,435	"		21,862	105,195	..	..	.		145,572		7,202 tons	211,067	Potash.
																								2,750 tons	43,275	Talc.
																									374,726	Pottery clay, dolomite, feldspar, gems, granite, gypsum, iron ore, lime, mineral water, pumice, soda
1922	125,728	2,374,918	13,452	1,816	11,188	615	"	"		12,222	54,249	2,770,953	4,156,430	"		2,200	7,800								1,826,304	Borax, calcium chloride, fuller's earth, gems, gypsum, lime, mineral water, potash, soda talc, miscellaneous stone.
1923	210,923	2,225,959	13,328	1,959	34,477	2,413	"	"		17,350	65,550	3,554,764	8,478,642	"		5,859	28,324	....	....	.....	.....	351,151		830 tons	12,630	Clay (pottery).
																								7,244 tons	123,316	Talc
																									2,226,516	Borates, calcium chloride, gems, gypsum, lime, mineral water, potash, soda (trona), tungsten concentrates
1924	187,573	1,531,598	17,067	2,314	31,688	2,333	.....			29,090	99,791	4,354,119	7,571,370	"		14,375	45,137	..	..			355,948		7,234 tons	125,926	Talc.
																									2,720,243	Borates, calcium chloride, clay (pottery), fuller's earth, gypsum, lime, mineral water, petroleum, potash, soda (trona), tungsten, concentrates
1925	157,374	1,378,392	6,240	888	61,480	5,340	.....	.....	.....	28,319	101,085	5,079,281	8,828,044	17,495	124,446	13,239	27,509	.				395,048		1,540 tons	11,000	Clay (pottery)
																									3,150,468	Borates, calcium chloride, fuller's earth, mineral water, petroleum, potash, soda (trona), talc, tungsten, concentrates.
1926	106,875	551,644	171,232	23,972	195,536	15,043	....			22,522	85,463	5,135,840	9,273,627	13,680	96,310	11,226	49,504					404,681		2,268 tons	10,605	Clay (pottery).
																								2,806 tons	73,721	Soda (trona)
																								8,134 tons	142,280	Talc.
																									3,384,150	Borates, calcium chloride, fuller's earth, magnesite, mineral water, petroleum, potash, silica tungsten concentrates, zinc.
1927	82,225	447,125	197,132	25,824	125,692	7,919	..	..				3,557,339	6,833,839	12,170	92,363	550,011	348,184					311,470		1,798 tons	26,803	Fuller's earth.
																								6,548 tons	49,400	Talc.
																									4,925,551	Borates, calcium chloride, clay (pottery), gems, mineral water, onyx, petroleum, potash, salt, silica, soda (trona), talc, tungsten concentrates.
1928	91,717	362,741	106,351	15,314	38,097	2,209	....	..	..	42,244	186,470	4,483,383	7,137,606	14,015	100,312	11,201	49,224					329,541	"	2,190 tons	12,215	Clay (pottery).
																									5,573,033	Antimony, borates, calcium chloride, fuller's earth, gems, mineral water, potash, soda, talc, and tungsten.
1929	44,984	189,756	81,846	14,405	53,532	3,373	....	..	..	24,949	114,796	3,576,005	4,603,301	10,145	77,340	15,526	40,753					629,111	1,540	2,596 tons	15,874	Clay (pottery).
																									5,474,419	Barytes, borates, calcium chloride, manganese mineral water, potash, volcanic ash, soda, talc, tungsten
1930	59,442	178,496	49,622	5,281	45,653	2,283	"	"	"	"	"	"	"	"	"	"	"					408,912		2,013 tons	14,910	Clay (pottery).
																									9,989,971	Barites, borates, brick, calcium, chloride, cement, fuller's earth, gems, lime, limestone, manganese ore, mineral water, potash, salt, soda, talc, tungsten.
1931	54,099	32,453	6,022	553	15,763	585	"	....		"						15,128	50,008	"				496,240	"	3,635 tons	20,703	Bentonite
																								1,220 tons	5,333	Pottery clay
																									9,299,304	Barite, borates, brick, calcium chloride, cement, gems, lime, manganese, mineral water, potash, pumice, iron ore, salt, silica (quartz), soda, talc tungsten.
1932	137,079	59,241	6,183	387	23,371	701	"	....		"						8,610	23,747	"				197,230		1,096 tons	6,491	Pottery clay.
																									5,626,589	Barite, bentonite, borates, brick, calcium chloride, cement, gems, lime, mineral water, petroleum, potash, salt, soda, talc.
																								275 tons	2,515	Barite.
1933	116,074	33,817	7,871	504	27,936	1,034	"	....		"						"						145,154		1,078 tons	10,042	Bentonite
																								786 tons	5,887	Pottery clay.
																								8,331 tons	85,262	Talc.
																									8,569,396	Borates, brick, calcium chloride, cement, fluorspar, lime, limestone, mineral water, petroleum, potash, volcanic ash, salt, soda, tungsten.
1934	201,994	147,597	25,806	2,048	103,497	3,829	"	....		"				39,900	30,846	11,210	29,740	"				165,057		1,185 tons	7,844	Pottery clay.
																									9,848,086	Barite, bentonite, borates, brick, calcium chloride, cement, fluorspar, gems, iron ore, manganese, mineral water, potash, salt, soda talc, tungsten ore.
Totals	$8,564,948	$28,493,638	14,510,077	2,403,775	6,369,851	$430,345	$10,609,295	$167,548	$490,166	$218,845	$895,186	$46,281,485	$78,812,157	$1,569,235	$2,239,440	$1,939,185	$2,121,416	$15,909	$125,721	$185,388	$343,076	$8,249,842	$131,660		$100,424,005	

[1] Includes crushed rock, rubble, rip-rap, sand, gravel.
[2] Combined annual production 1910, 1911, 1912
[3] See under 'Unapportioned.'

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Year	Brick		Natural gas	
	M	Value	M cubic feet	Value
1885				
1886				
1894				$75,0(
1895				100,0(
1896	7,000	$35,000		85,1
1897	5,500	22,000		57,41
1898	6,500	34,000		57,2
1899	5,500	27,000	102,960	84,8
1900	2,000	20,000	27,000	19,8(
1901	2,000	20,000		60,4
1902	[2]3,000	[2]18,000	81,481	67,8(
1903	[2]4,000	[2]24,000	88,134	44,3
1904	7,500	45,000	106,437	47,63
1905	11,400	68,000	100,950	53,91
1906	7,500	49,500	103,450	55,11
1907	12,250	81,000	101,000	52,72
1908	28,412	189,560	60,903	49,19
1909	8,088	242,634	71,883	149,06
1910	8,744	212,538	313,392	159,45
1911	5,275	49,650		114,43
1912	6,128	64,874		145,16
1913	6,314	73,768	142,730	67,96
1914	5,793	82,890	154,872	25,90
1915	3,000	75,000	161,923	143,97
1916	10,189	158,722	182,441	141,60
1917	also tile	185,060	348,146	72,58
1918		305,475	202,453	60,40
1919		231,478	200,943	76,20
1920		[3]	200,433	74,95
1921		294,712	204,057	79,57
1922		[3]	199,389	62,45
1923		[3]		[3]
1924	14,936	462,688		[3]
1925	also tile	472,983		
1926	also tile	511,448		
1927	also tile	630,218		
1928	also tile	512,425		
1929	also tile	607,469		
1930	11,858	478,454		
1931	also tile	308,217		
1932	[3]			
1933	[3]			
1934	[3]			
Totals		[3]$6,993,763		$2,284,63

[1] Production of manganese ore in California began at the Ladd Mine, San Joaquin County, in the Tesla District in 1867. When shipments of this ore to England ceased late in 1874, upwards of 5,000 tons had been produced by that property. Annua amounts earlier than 1894 are not separable.

[2] Estimated.

[3] See under 'Unapportioned.'

[4] Includes crushed rock, rubble, rip-rap, sand, gravel.

N JOAQUIN COUNTY, 1885-1934

Manganese		Miscellaneous stone[4], value	Miscellaneous and unapportioned		
Tons	Value		Amount	Value	Substance
[1]				$2,500	Gold.
55	$550		275 tons	343	Pottery clay.
280	2,800				
			273 tons	2,730	Asphalt.
			3 tons	90	Infusorial earth.
		$25,000			
60	1,080		2,000 tons	13,000	Clay.
				214,835	Unapportioned, 1900-1909.
260	4,160				
			25,510 tons	25,510	Clay.
		900	1,494 tons	18,522	Clay.
			3,000 tons	4,000	Glass sand.
150	1,500	19,440		200	Other minerals.
460	7,400	21,620		400	Other minerals.
6,493	115,460	53,075			
6,320	157,500	55,003		72	Other minerals.
4,281	117,709	47,085		71,299	Gold, platinum, silver.
343	10,274	59,510		71,538	Gold, platinum, silver.
[3]		63,077		333,068	Brick, gold, manganese, platinum, silver.
425	3,750	72,815		23,530	Other minerals.
[3]		[3]		314,269	Bricks and clay.
				96,672	Manganese ore, miscellaneous stone.
		260,597		472,858	Brick and clay.
				77,774	Manganese ore, natural gas.
		83,874		55,938	Manganese ore, natural gas.
		103,237		161,598	Other minerals.
		129,037		201,515	Other minerals.
		81,747			
		63,444		49,062	Unapportioned.
		135,317		47,105	Unapportioned.
		202,307		44,101	Unapportioned.
		119,729		34,250	Unapportioned.
			6 oz.	2	Silver.
		76,701		1,440	Gold.
				192,349	Brick and natural gas.
			4 oz.	1	Silver.
		49,913		1,017	Gold.
				102,196	Brick and hollow building tile, natural gas.
				1,133	Gold.
		77,507	3 oz.	2	Silver.
				69,455	Brick and hollow building tile, natural gas.
[2]19,127	$422,183	$1,800,935		$2,704,474	

Year	Bituminous rock		Brick		Chromite		Gold,[3] value	Mineral water	
	Tons	Value	M	Value	Tons*	Value		Gallons	Value
1876									
1877									
1878									
1879									
1880					[2]17,030	$184,704			
1881					1,790	24,000			
1882							$5,000		
1883					5,558	99,200			
1884									
1885					670	8,880			
1886					980	13,140	9,164		
1887	36,000	$180,000			600	7,980	1,740		
1888	43,000	215,000			300	2,550	3,000		
1889					4,300	66,865	6,260		
1890					687	5,496	8,800		
1891					75	592	1,785		
1892							1,097		
1893							600		
1894	9,432	32,263			[4]800	10,500	1,200		
1895	6,354	17,600	750	$3,750	[4]700	6,650	3,000		
1896	5,113	11,464			[4]200	2,000	3,000		
1897	2,291	5,117					2,500	7,800	$1,960
1898	4,788	18,927	830	5,280			1,000	800	400
1899	10,818	40,288	650	3,500					
1900	3,346	12,905	500	4,000					
1901	9,472	33,070	650	5,200			300	24,000	6,000
1902	1,790	2,327	900	7,650			2,399	4,500	800
1903	3,365	7,572	750	6,000			1,840		
1904							630	4,000	1,000
1905	2,533	6,348	400	3,200			300		
1906	2,533	6,644	300	2,400					
1907	2,167	8,128	2,000	16,000			316	4,800	1,000
1908	5,077	21,875	1,440	12,900				4,800	1,056
1909	2,731	6,369	2,245	19,605				4,000	1,000
1910	1,982	4,016	900	8,000				6,000	1,600
1911	2,710	5,230	2,000	18,000				2,000	1,000
1912	807	1,472						2,500	625
1913	609	1,149	1,750	17,500			124	1,500	600
1914	579	1,118						1,000	250
1915	[6]				[6]			4,500	675
1916	[6]		4,150	45,500	1,855	27,733		2,500	475
1917	[6]		[6]		4,109	92,846		1,500	300
1918	[6]				10,443	539,423	[6]	[6]	
1919	[6]				1,158	26,431			
1920					399	10,440			
1921					[6]			[6]	
1922					[6]			[6]	
1923					[6]			[6]	
1924			2,033	35,987				[6]	
1925			[6]		[6]		840	[6]	

* Copper was weighed in tons of 2,360 pounds and chromite in tons of 2,240 pounds, but here converted to 2,000 pounds.

[1] The total production of asphaltum up to 1894 was reported as 800 barrels. This production reduced to tons is shown under 1894.

[2] Although a great deal of chromic iron ore was mined and marketed during the '70's, there are no records of yearly production. The above figure for 1880 represents the total shipments from San Luis Obispo up to August, 1880.

[3] There are no records of annual mineral production for the period of 1865-1876, but there was a small annual gold production from shallow placers before this, and these placers have no doubt yielded considerable gold never reported. The same observation applies to a number of small quicksilver properties worked in the '70's.

[4] Concentrates.

[5] Includes crushed rock, rubble, sand, gravel; also granite and sandstone prior to 1915.

[6] See under 'Unapportioned.'

SAN LUIS OBISPO COUNTY, 1876-1934

Petroleum		Quicksilver[3]		Miscellaneous stone[5], value	Miscellaneous and unapportioned		
Barrels	Value	Flasks	Value		Amount	Value	Substance
		6,428	$282,832		*236,000 lbs.	$7,287	Copper.
		3,310	123,463				
		2,151	70,768				
		779	2,358				
				$8,772	[1]220 tons	4,400	Asphaltum (rock).
					500 cu. ft.	20,000	Cal. onyx.
		20	800	45,520	400 cu. ft.	4,000	Cal. onyx.
		101	3,400	17,407			
		101	3,939	13,500	238 cu. ft.	1,000	Cal. onyx.
		384	11,660	47,000			
		394	17,700	6,740	16 tons	320	Asphaltum (rock).
		515	23,886	44,835			
		840	41,513		2,000 tons	30,000	Asphaltum (rock).
		3,312	147,215		4,000 tons	40,000	Asphaltum (rock).
		4,577	183,530	58,374	100 bbls.	100	Lime.
		†4,746	176,616	81,000			
		3,733	133,748	46,000			
		3,511	128,152	35,500			
48,127	$16,845	2,509	95,743	3,000	6,000 tons	90,000	Asphaltum (rock).
10,000	5,000	867	36,648	900	300 bbls.	600	Lime.
30,000	15,000	317	15,510	400	4,500 tons	55,000	Asphaltum (rock).
						218,205	Unapportioned, 1900-1909.
22,310	11,155	563	25,476	75	13,000 tons	165,000	Asphaltum (rock).
38,092	25,146	569	26,180				
2,129	1,469	666	27,998				
		1,160	46,667	134			
		1,266	62,097				
		1,473	125,542	99,475		1,940	Bituminous rock, chromite.
					356 lbs.	88	Copper.
11,670	5,252	1,227	114,724	49,318		2,717	Bituminous rock, pottery clay, sandstone.
74,143	68,656	1,565	151,034	8,422		16,886	Bituminous rock, brick, manganese, soda.
62,744	56,783	[6]		6,100	1,907 tons	81,926	Manganese ore.
						174,447	Bituminous rock, copper, gold, mineral water, quicksilver, silver, soda.
31,656	32,922	[6]		20,300		132,777	Bituminous rock, manganese, quicksilver, sandstone, soda.
42,511	59,515	1,224	89,186	[6]		246,463	Copper, granite, manganese, soda, miscellaneous stone.
30,725	43,691			80,000		6,100	Chromite, diatomaceous earth, mineral water.
33,856	31,892			107,000		2,578	Chromite, diatomaceous earth, mineral water.
32,988	19,793			46,479		78,977	Chromite, diatomaceous earth, mineral water, quicksilver, soda (salt cake).
31,222	30,972	[6]		113,384		137,436	Mineral water, natural gas, quicksilver, sodium sulphate.
						7	Silver.
29,590	32,164	[6]		50,113		53,353	Brick, chromite, mineral water, natural gas, quicksilver, sodium sulphate.

† Flasks of 76½ pounds previous to June, 1904; of 75 pounds thence, through 1927; of 76 pounds since January, 1928.

Year	Bituminous rock		Brick		Chromite		Gold, value	Mineral water	
	Tons	Value	M	Value	Tons*	Value		Gallons	Value
1926					[6]			[6]	
1927									
1928			[6]		[6]		$725	[6]	
1929				$31,320	[6]		1,267	[6]	
1930			[6]		[6]		1,461	[6]	
1931			[6]				1,549	[6]	
1932							1,021	[6]	
1933			[6]		[6]		759	[6]	
1934			[6]		[6]		1,946	[6]	
Totals	[6]157,497	$638,882	[6]	$245,792	[6]51,653	$1,129,430	$63,623	[6]76,200	$18,741

[7] Includes chromite, granite (tuff), marble, mineral water, petroleum, volcanic ash.
[8] Includes brick and building tile, chromite, clay (pottery), granite (tuff), marble, mineral water, petroleum, volcanic ash.
[9] Includes brick and building tile, granite (tuff), mineral water, volcanic ash, sandstone.
[10] Includes brick, chromite, mineral water, petroleum, volcanic ash, miscellaneous stone.
[11] Includes brick, granite (tuff), mineral water, volcanic ash, chromite, petroleum, sandstone.

SAN LUIS OBISPO COUNTY, 1876-1934—Continued

Petroleum		Quicksilver		Miscellaneous stone[5], value	Miscellaneous and unapportioned		
Barrels	Value	Flasks	Value		Amount	Value	Substance
27,982	$22,162	----	----	$193,138	----	$22,914	Clay and clay products.
					----	15,080	Chromite, mineral water, natural gas, quicksilver.
16,709	12,531	470	$53,600	195,631	----	33,268	Brick, building tile (hollow), copper mineral water, pumice.
15,140	12,869	435	48,254	111,181	2 fine oz.	1	Silver.
					----	44,095	Brick, building tile, chromite, mineral water.
[6]	----	1,076	120,995	11,061	2 fine oz.	1	Silver.
					----	26,440	Other minerals.[7]
[6]	----	1,306	157,440	28,659	3 fine oz.	1	Silver.
					----	60,554	Other minerals.[8]
53,349	29,342	2,574	202,870	150,016	2 fine oz.	1	Silver.
					----	16,357	Other minerals.[9]
66,744	36,709	2,035	106,508	105,075	3 fine oz.	1	Silver.
					----	616	Mineral water, volcanic ash, sandstone.
[6]	----	285	15,759	[6]	----	39,396	Other minerals.[10]
[6]	----	1,302	91,677	11,860	8 fine oz.	5	Silver.
					----	32,965	Other minerals.[11]
675,687	$569,868	57,791	$2,965,488	$1,796,369	----	$1,863,362	

Year	Salt		Brick	
	Tons	Value	M	Value
1895				
1896				
1897				
1898			1,140	$7,00
1899			2,870	24,22
1900			225	9,00
1901	40	$400	500	9,07
1902	6,500	16,000	200	8,00
1903	7,700	25,000	3,100	77,50
1904	12,000	62,500	3,902	56,43
1905	16,000	67,500	5,902	61,43
1906	14,900	44,920	6,613	67,00
1907	14,000	56,000	8,078	86,28
1908	23,800	60,900	4,494	63,23
1909	22,100	95,400	1 346	38,40
1910	26,000	64,750	1,350	37,25
1911	27,500	55,000	1,350	43,00
1912	33,000	80,000	1,400	40,50
1913	28,000	72,250	1,418	44,68
1914	27,500	76,750	950	24,07
1915	25,500	63,750	715	19,55
1916	28,540	70,807	986	38,12
1917	36,483	114,689		
1918	26,434	144,604		
1919	30,238	136,190		
1920	37,409	206,897		
1921	32,587	167,022	[3]	
1922	32,428	149,302		
1923	35,757	199,192		
1924	54,258	205,176		
1925	31,325	155,925		
1926		[3]		
1927		[3]		
1928	[3]			
1929	[3]			
1930	[3]			
1931	[3]			
1932	[3]			
1933	[3]			
1934	[3]			
Totals	630,089	$2,360,924	[4]46,539	$754,763

[1] The limestone produced in San Mateo County is used as crushed rock and is included under Stone Industry. Previou to 1915 it was erroneously classified as industrial limestone and tabulated under that heading.
[2] Includes crushed rock, rubble, sand, gravel.
[3] See under 'Unapportioned.'
[4] Includes shells dredged from San Francisco Bay, see under 'Unapportioned.'

SAN MATEO COUNTY, 1895-1934

Limestone		Miscellaneous stone[2], value	Miscellaneous and unapportioned		
Tons	Value		Amount	Value	Substance
			5,000 tons	$5,000	Clay.
			1,000 bbls.	1,250	Petroleum.
			500 bbls.	1,250	Cement.
		$40,000			
		70,000			
		34,000			
		7,500			
		6,000	17 tons	255	Asphalt.
		301,120	5,000 tons	5,625	Clay.
		150,000			
		113,866	3,000 bbls.	6,000	Petroleum.
		75,000			
		111,823			
		2,111			
37,687	$17,451	89,142			
120,306	96,245	90,221		500	Gems.
111,382	89,106	88,766			
93,500	74,800	61,185			
102,300	66,495	29,587			
138,544	78,506	18,635		300	Gems.
			81,000 tons	34,120	Sandstone.
153,329	75,941	34,648	6,581 bbls.	845	Lime.
				200	Gems.
				100	Gems.
[1]		93,391		1,100	Other minerals.
			593 tons	732	Pottery clay.
		25,663		85	Gems.
				150	Gems.
		71,668		20,656	Brick and tile, magnesium chloride, potash.
		34,164		15,044	Magnesium chloride, potash.
		42,235		63,246	Other minerals.
			322 bbls.	966	Petroleum.
		46,040		39,200	Magnesium salts, potash.
			322 bbls.	966	Petroleum.
		61,697		27,407	Brick, magnesium chloride, potash.
		60,009		34,984	Magnesium salts, petroleum, potash.
		96,815		33,809	Magnesium chloride, petroleum, potash.
		75,078		21,917	Gems, magnesium chloride, petroleum, potash.
		90,757		1,330,831	Cement, gems, magnesium chloride, natural gas, petroleum, potash.
		77,470		1,816,383	Cement, magnesium chloride, natural gas, petroleum, salt.
[3]		129,802		1,734,036	Cement, limestone, natural gas, petroleum, salt.
[4]		251,602		3,076,971	Cement, limestone, mangesium, carbonate, natural gas, petroleum, salt.
[4]		278,839		3,393,940	Cement, limestone, magnesium carbonate, natural gas, salt.
[4]		340,490		2,159,447	Cement, limestone, magnesium carbonate natural gas, salt.
[4]		219,715		2,010,794	Cement, limestone, magnesium carbonate, natural gas, salt.
[4]		169,689		1,173,761	Cement, limestone, magnesium carbonate, natural gas, salt.
[4]		75,752		1,493,728	Cement, limestone, magnesium carbonate, natural gas, petroleum, salt.
[4]		24,000		1,538,490	Cement, limestone, magnesium carbonate, natural gas, petroleum, salt.
[4]757,048	$498,544	$3,587,760		$20,043,988	

Year	Lime		Limestone	
	Barrels	Value	Tons	Value
1894	167,000	$138,200	4,000	$5,00
1895	145,000	133,750	12,055	12,05
1896	116,000	95,500	27,827	28,66
1897	149,600	111,800	10,688	8,00
1898	151,000	151,000	7,912	5,73
1899	161,893	176,893	4,135	3,73
1900	163,985	131,288	1,669	1,21
1901	161,500	161,500	3,845	3,59
1902	185,223	161,302	1,850	1,85
1903	220,835	185,442	3,000	2,72
1904	293,207	306,775	[2]	
1905	218,084	199,974	7,325	52,12
1906	255,469	347,490	11,431	55,24
1907	213,599	241,179	6,370	6,00
1908	119,996	119,996	1,178	2,16
1909	228,875	296,785	3,457	5,27
1910	214,137	230,513	4,361	6,77
1911	216,508	206,225	22,622	44,59
1912	169,646	159,505	7,307	7,55
1913	75,000	60,000	39,494	30,99
1914	173,282	157,011	14,666	25,08
1915	191,643	177,873	2,047	4,87
1916	176,263	225,485	4,318	9,82
1917	213,104	173,778	6,527	11,37
1918	182,083	285,316	7,132	15,31
1919	150,271	234,039	5,527	12,69
1920	141,633	202,908	5,062	20,10
1921	122,907	242,869	[2]	
1922	174,490	235,802	4,581	20,53
1923	157,660	203,632	6,733	14,24
1924	127,830	212,540	[2]	
1925	165,340	224,724	16,551	33,10
1926	154,570	227,904		
1927	134,310	173,207	16,717	38,04
1928	121,290	135,991	8,600	24,84
1929	100,750	112,761	15,143	40,78
1930	[2]		11,405	46,92
1931	[2]		9,383	34,43
1932	[2]		6,330	15,29
1933	[2]		6,413	22,58
1934	[2]		[2]	
Totals	[3]6,113,983	$6,606,998	[3]327,661	$870,577

[1] Includes crushed rock, rubble, sand, gravel.
[2] See under 'Unapportioned.'

SANTA CRUZ COUNTY, 1894-1934

Bituminous rock		Miscellaneous stone[1], value	Miscellaneous and unapportioned		
Tons	Value		Amount	Value	Substance
20,782	$79,980				
32,067	102,486	$4,000	75 M	$375	Brick.
43,843	109,536	4,000	497 M	2,485	Brick.
43,179	123,056		300 M	1,500	Brick.
40,598	113,898				
27,503	70,569	200			
21,960	58,590				
13,580	30,654		10 tons	30	Clay.
31,700	41,084		106 tons	1,060	Asphalt.
18,426	45,190	20,750	700 cu.ft.	140	Granite.
[2]		2,925			
17,583	42,500	1,750			
13,544	38,860	3,500			
21,955	64,707	14,800			
25,041	85,123	19,736	450 cu.ft.	336	Granite.
			28,400 tons	28,400	Clay.
31,392	110,067	20,717	63,541 tons	13,800	Clay.
				1,794,294	Unapportioned, 1900-1909.
35,565	124,195	23,425	52,970 tons	15,981	Clay.
				2,096,031	Unapportioned.
24,815	80,371	7,627		2,448,339	Unapportioned.
32,146	80,439	22,710		879,437	Other minerals.
26,932	67,330	10,511		1,647,970	Unapportioned.
40,540	115,500	4,276		1,341,089	Unapportioned.
17,399	60,728	6,794		1,331,263	Unapportioned.
[2]		2,815		1,440,991	Cement, marble, bituminous rock.
[2]		2,368		1,480,800	Cement, potash, bituminous rock.
[2]		9,107		2,599,717	Cement, potash, bituminous rock.
[2]		17,074		1,981,253	Other minerals.
[2]		23,379		2,834,750	Bituminous rock, cement, iron ore, mineral paint, potash.
[2]		22,895		3,815,121	Bituminous rock, cement, limestone, mineral paint, potash.
[2]		7,398		3,345,071	Cement, bituminous rock, potash.
[2]		15,363		3,992,668	Cement, bituminous rock, potash.
[2]		29,217		4,097,476	Cement, bituminous rock, potash, limestone.
[2]		21,125		2,948,085	Bituminous rock, cement.
				143	Gold.
[2]		26,361		1	Silver.
				3,249,785	Bituminous rock, cement, limestone.
[2]		45,570		3,216,387	Bituminous rock, cement.
		62,571		3,100,509	Bituminous rock and cement.
		75,250		3,098,836	Bituminous rock and cement.
		79,218		2,235,811	Bituminous rock, cement, iron ore, lime.
		98,881		1,633,823	Bituminous rock, cement, coal, lime.
		34,253		998,221	Bituminous rock, cement, lime.
		14,120		307	Gold.
			3 oz.	1	Silver.
				1,197,165	Bituminous rock, cement, lime.
		84,744		130	Gold.
			2 oz.	1	Silver.
				1,711,969	Bituminous rock, cement, coal, iron ore, lime, limestone.
[3]580,550	[2]$2,225,363	$819,430		$60,581,461	

MINERAL PRODUCTION OF SANTA BARBARA COUNTY, 1881-1934

Year	Petroleum		Natural gas		Asphalt bituminous rock		Mineral water		Diatomaceous earth		Brick		Limestone		Sandstone		Miscellaneous stone[1], value	Miscellaneous and unapportioned		
	Barrels	Value	M cubic feet	Value	Tons	Value	Gallons	Value	Tons	Value	M	Value	Tons	Value	Cubic feet	Value		Amount	Value	Substance
1881																			$2,000	Gold.
1882																				
1889																			41,423	Gold.
1890																			10,293	Gold.
1891																			2,478	Gold.
1892																			896	Gold.
1893																				
1894	1,800	$1,800			4,550	$91,000														
1895	16,904	12,678			23,950	139,000	22,500	$3,000											4,000	Gold.
1896	39,792	35,813			18,430	317,910	31,500	20,300							5,000	$500		12 ozs.	44	Platinum.
1897	130,136	130,136	[2]500	$246	18,047	318,000	65,000	30,000											8,592	Gold.
1898	132,217	112,549	[2]165	135	19,735	351,400	15,000	7,000			100	$700							3,000	Gold.
1899	208,370	191,228	150	120	6,058	121,160	15,000	5,000			120	960							1,000	Gold.
1900	183,486	165,138	1,203	2,966	5,270	105,500	19,000	10,350			4,620	40,960	7,205	$3,602	224,820	117,260	$82,662			
1901	203,616	113,385	[2]876	438	4,145	55,800	113,780	60,200			1,250	9,825			72,000	27,100	33,400			
1902	230,440	181,313	937	375	1,259	12,590	105,280	60,200	362	$2,172	1,400	12,200	10,000	25,000	74,200	21,500			200	Gold.
1903	262,226	149,640	320	320	2,974	41,688	88,800	22,280	2,700	15,925	4,900	46,200	20,000	40,000	82,654	34,240	4,395	30,000 bbls.	30,000	Lime.
1904	790,000	445,360	3,000	1,500	9,000	190,000	118,000	18,240	6,950	112,282	1,120	8,420	6,000	12,000	5,000	3,600				
1905	3,534,000	1,413,600			3,000	30,000	115,250	21,450	3,000	15,000	4,025	34,750	5,000	7,500	29,600	18,330	57,792	52 flasks	2,070	Quicksilver.
																			735	Gold.
																			3	Silver.
1906	4,876,000	1,237,250	1,000	500	25,000	250,000	13,750	10,450	2,300	13,800	200	1,600	8,000	16,000	36,195	25,230	9,732		250	Gold.
1907	8,392,623	4,166,661	600	300	19,192	258,549	39,480	24,250	2,531	28,948	1,615	14,650	15,000	30,000	39,740	37,566	4,950	60 flasks	2,289	Quicksilver.
1908	8,847,589	4,423,794	715,612	357,806	7,000	70,000	5,500	4,932	2,950	32,012	750	7,500	16,580	33,160	10,525	6,545	10,930			
1909	8,116,788	4,059,661	768,000	394,621	200	2,488	155,400	22,200			990	9,180	4,849	6,619	31,120	10,648	5,316		89,254	Unapportioned, 1900-1909.
1910	7,682,553	3,856,222	9,198,000	1,393,250			155,000	21,300	1,343	14,117	1,900	16,825	4,028	7,898	39,720	15,888	6,035	70 flasks	3,225	Quicksilver.
1911	6,786,156	3,204,717	[1]1,003,850	100,386			73,640	15,900	1,344	13,720	1,600	13,800	4,239	8,174	38,976	29,507	6,602	50 flasks	2,301	Quicksilver.
1912	6,862,719	3,747,045	[3]3,425,000	253,633	11,120	5,556	105,000	11,550	1,129	13,074	2,615	17,150	5,327	11,666	4,300	1,670	17,480	12,000 tons	16,000	Clay.
																		17,500 bbls.	15,434	Lime.
1913	6,291,076	3,151,725	5,096,300	254,815	10,000	10,000	112,500	108,130	6,895	28,960	3,000	24,000	5,884	19,623	4,500	1,670	11,450	12,000 tons	16,000	Clay.
																		23,512 bbls.	25,910	Lime.
1914	4,325,787	1,989,862	6,313,380	378,802	25,000	50,000	160,400	152,432	[2]		2,100	16,800	6,157	11,263	9,286	1,850	15,300		70,000	Other minerals.
1915	5,634,534	3,442,700	3,193,368	279,697			189,026	156,175	[2]		1,800	14,400	5,956	10,006	29,900	6,488	13,900		61,600	Other minerals.
1916	4,502,206	3,374,752	3,660,140	724,746	[2]		176,608	110,200	[2]		[2]		[2]		3,520	1,017	12,395		111,919	Bituminous rock, brick, "granite," diatomaceous earth, limestone, quicksilver.
1917	5,631,563	4,550,303	3,104,170	227,507			104,991	86,026	[2]		[2]		[2]		28,700	6,150	5,950	97 tons	126,830	Potash.
																			150,315	Brick, diatomaceous earth, limestone, quicksilver.
1918	7,334,104	9,057,618	4,150,316	338,036	[2]		73,117	97,162	[2]		[2]		3,790	18,830	[2]		11,613	1,853 tons	256,780	Potash.
																			271,792	Bituminous rock, chromite, brick, diatomaceous earth, quicksilver, sandstone.
1919	6,089,082	6,850,217	4,084,709	336,092	[2]		82,147	81,041	[2]		[2]		[2]				29,900	298 tons	30,128	Potash.
																			267,539	Bituminous rock, chromite, brick, diatomaceous earth, limestone.
1920	5,803,583	9,140,643	1,359,665	128,126	[2]		95,843	110,931	[2]		[2]				[2]		27,436	410 tons	40,000	Potash.
																			1,091,475	Bituminous rock, brick, diatomaceous earth, quicksilver, sandstone.
1921	5,465,942	9,422,657	1,544,892	145,179	[2]		97,847	133,590	[2]						[2]		65,600	143 tons	5,720	Potash.
																			718,183	Bituminous rock, diatomaceous earth, sandstone.
1922	3,931,155	3,974,398	1,876,900	167,290	[2]		110,552	52,269	[2]		[2]				[2]		72,300		347,101	Bituminous rock, brick, diatomaceous earth, potash, sandstone, shale oil.
1923	3,031,947	2,394,443	1,612,287	172,725	[2]		81,200	80,300	[2]						[2]		14,324		2,344,090	Bituminous rock, diatomaceous earth, sandstone, shale oil.
1924	2,905,181	3,009,768	1,643,355	158,836	[2]		[2]		[2]		[2]		[2]		[2]		75,305		1,915,831	Clay and clay products, bituminous rock, diatomaceous earth, mineral water, shale oil.
1925	2,647,380	2,419,705	2,545,208	248,708			[2]		[2]			75,487					103,665	2,390 tons	5,809	Clay (pottery).
																			1,482,066	Diatomaceous earth, mineral water, shale oil.
1926	1,925,204	1,521,587	2,230,501	246,091	[2]		[2]		[2]			17,076					88,575	1,100 tons	1,700	Clay (pottery).
																			703,519	Bituminous rock, diatomaceous earth, mineral water, shale oil.
1927	2,173,887	1,630,415	1,701,715	204,775	[2]		[2]		[2]		[2]						139,093		725,013	Bituminous rock, brick and hollow building tile, clay (pottery), diatomaceous earth, mineral water, sandstone, shale oil.
1928	3,078,103	3,409,923	1,154,803	158,930	[2]		2,950	175	[2]		[2]		[2]				270,661		737,650	Barite, bituminous rock, brick and hollow building tile, diatomite, marble.
1929	11,141,789	13,984,055	1,291,786	145,680	[2]		[2]		[2]		[2]		[2]				264,745		2,012,656	Barite, bituminous rock, brick and hollow building tile, diatomite, marble, mineral water.
1930	15,914,132	22,343,440	1,274,436	299,918	[2]		[2]		[2]		[2]	14,980	[2]				202,055		1,507,081	Barite, bituminous rock, clay (pottery), diatomite, marble, mineral water, quicksilver.
1931	11,660,456	11,121,743	1,534,435	446,885	[2]		[2]		[2]		[2]		[2]				97,476	7,135 lbs.	650	Copper.
																			81	Gold.
																		6 ozs.	2	Silver.
																			1,077,923	Barite, bituminous rock, brick and hollow building tile, clay (pottery), diatomite, marble, mineral water, quicksilver.
1932	1,958,649	6,405,620	4,479,831	309,154	[2]		[2]		[2]		[2]		[2]				87,045	129 flask	6,773	Quicksilver.
																			774,045	Barite, bituminous rock, diatomite, marble, mineral water.
1933	6,395,679	5,999,786	3,471,759	184,609	[2]		[2]		[2]		[2]		[2]				38,019	27,998 lbs.	1,792	Copper.
																			27	Gold.
																		20 ozs.	7	Silver.
																			787,533	Bituminous rock, diatomite, marble, mineral water, quicksilver.
1934	6,648,120	9,322,148	4,860,533	316,360	[2]		[2]		[2]		[2]		[2]				51,602		880,081	Bituminous rock, brick, diatomite, marble, mineral water.
Totals	180,496,976	$163,080,084	87,303,712	$8,379,557	[3]213,930	$2,420,041	[3]2,344,061	$31,679	[3]31,504	$290,010		$398,463	[3]128,015	$261,341	[3]789,956	$366,759	$1,911,003		$18,792,088	

[1] Includes crushed rock, rubble, rip-rap, sand, gravel.
[2] See under "Unapportioned."
[3] Quantity estimated, as only value originally reported.

MINERAL PRODUCTION OF SANTA CLARA COUNTY, 1850-1934

Year	Quicksilver		Mineral water		Petroleum		Brick		Pottery clay		Sandstone		Limestone		Miscellaneous stone[1], value	Magnesite		Miscellaneous and unapportioned		
	Flasks	Value	Gallons	Value	Barrels	Value	M	Value	Tons	Value	Cubic feet	Value	Tons	Value		Tons	Value	Amount	Value	Substance
1850	7,723	$768,052																		
1851	27,779	1,859,248																		
1852	15,901	927,505																		
1853	22,284	1,233,648																		
1854	30,004	1,663,722																		
1855	29,142	1,560,554																		
1856	27,138	1,401,678																		
1857	28,204	1,374,381																		
1858	25,761	1,232,149																		
1859	1,294	81,690																		
1860	7,061	378,117																		
1861	34,429	1,447,739																		
1862	33,671	1,442,041																		
1863	32,803	1,380,350																		
1864	42,489	1,950,245																		
1865	47,104	2,166,205																		
1866	35,150	1,867,519																		
1867	24,461	1,122,760																		
1868	25,628	1,176,325																		
1869	16,898	775,618																		
1870	14,423	827,592																		
1871	18,568	1,171,641																		
1872	18,574	1,224,584																		
1873	11,042	887,004																		
1874	9,084	995,455																		
	20,000	1,098,000																		
1875	16,980	1,428,867																		
1876	27,930	1,228,920																		
1877	30,237	1,127,840																		
1878	24,924	820,000																		
1879	36,054	1,076,212																		
1880	30,135	934,185																		
1881	31,288	933,321																		
1882	29,208	824,542																		
1883	29,084	836,165																		
1884	20,000	610,000																		
1885	21,400	658,050																		
1886	18,000	639,000																		
1887	20,000	847,600																		
1888	18,000	765,000																		
1889	13,100	589,500																		
1890	12,000	630,000																		
1891	8,200	371,105																		
1892	5,563	226,470																80,000 cu. ft.	$4,072	Natural gas.
1893	6,614	243,064																		
1894	7,235	222,169	5,000	$1,250	3,500	$8,500	22,725	$119,250			24,000	$8,292						800,000 cu. ft.	12,000	Natural gas.
1895	7,050	253,800	20,000	5,000	4,000	10,000	24,750	131,250							$33,900					
1896	6,222	211,570	44,000	18,800	900	1,145	15,000	80,000					500	$600	5,000				1,300	Natural gas.
1897	4,700	169,200	39,500	17,600	4,000	10,000	19,000	105,000												
1898	5,875	235,000	25,863	11,358	3,000	6,000	13,098	65,490	200	$2,500					12,000			32 tons	640	Asphalt.
1899	4,435	186,270	79,000	19,150	1,500	3,000	30,741	170,455					1,800	3,000	8,000	100	$1,350	5 tons	75	Manganese.
1900	5,145	241,073	30,000	8,050			20,000	136,000	2,000	6,000	120,000	100,000	8,000	6,000		39	253			
1901	5,220	236,608	55,000	8,500			21,800	94,570			60,000	80,000			917	50	300	17 tons	255	Asphalt.
1902	5,869	254,260	21,900	5,500			23,982	178,662			35,000	31,500						2,000 cu. ft.	1,200	Granite.
1903	5,603	233,130	50,000	12,500	4,695	3,966	28,089	188,284			112,350	225,000	7,000	7,000	100			21 tons	47	Bituminous rock.
																		11 tons	132	Asphalt.
1904	[3]8,889	148,103	50,000	12,500	42,000	13,860	24,999	178,581							12,000					
1905	2,693	95,968	5,000	1,200	41,000	14,555	28,486	204,357	700	1,050	100,000	150,000	10,000		3,000					
1906	2,592	94,608	5,000	1,250	7,000	2,800	23,397	183,676	1,000	1,500			9,460	15,000						
1907	2,518	95,086	11,374	2,187	22,100	5,525	30,053	255,424			3,500	3,500	671	16,694		[3]3,700	33,300			
1908	2,400	103,984	371,635	39,055	35,400	17,700	15,000	63,618					2,221	1,417	45,142	[2]2,000	24,000	10,017 bbls.	10,017	Lime.
																		1,000 bbls.	1,000	Lime.
1909	3,747	158,490	373,367	40,754	63,780	76,536	6,000	30,000					4,284	4,150	75,916	300	3,000		82,254	Unapportioned, 1900-1909.
1910	4,038	182,719	182,500	11,200	36,660	36,660	12,000	66,000	12,000	66,000			2,417	3,451	68,765	7,560	51,937			
1911	7,533	346,593	165,720	10,000	12,828	8,505	6,000	30,000					3,374	3,918	62,595					
1912	8,695	365,538	152,500	10,250	14,092	8,295	18,000	105,000					3,549	4,120	48,228	600	6,000	13,508 bbls.	10,154	Lime.
1913	3,709	149,213	101,000	10,750	20,000	12,000	18,000	95,000						4,200	29,377	70	560	13,107 bbls.	9,783	Lime.
1914	2,407	118,063	29,000	10,750	10,000	5,300	15,900	79,500							39,093	1,425	14,250	2,000 cu. ft.	500	Natural gas.
1915	4,386	376,319	38,400	16,770	16,617	11,067	10,096	57,784					[1]		98,342	7,623	74,607		340	Other minerals.
1916	4,016	375,496	50,000	11,300	16,368	10,901	13,100	82,800	2,024	2,293			[1]		111,974	23,207	232,156		25,028	Chromite, limestone, manganese.
1917	5,921	639,594	10,230	1,923	18,855	26,152	14,000	80,000	6,014	4,929					111,304	9,963	99,287		28,341	Chromite, manganese, tile, limestone.
1918	3,977	478,524	13,025	1,678	20,490	34,848	6,792	62,000					[1]		111,860	9,746	121,872		948,786	Chromite, manganese, clay, tile, potash.
1919	3,012	271,762	[1]		16,724	26,695	7,250	65,000	2,532	2,232			[1]		73,237	10,912	128,924		480,721	Manganese, limestone, mineral water, potash.
1920	2,893	233,199	3,360	480	16,095	23,901	11,890	164,880	1,900	4,600					129,582	26,612	392,580		89,670	Limestone and potash.
1921	[1]		2,560	275	13,904	26,943	7,501	110,961	1,126	2,300			[1]		138,584	25,800	280,000		191,645	Limestone marl, potash, quicksilver.
1922	[1]		3,500	325	[1]		11,409	150,057	3,836	7,372			8,252		235,125	28,650	301,875		199,282	Limestone (marl), petroleum, quicksilver.
1923	[1]		[1]		[1]		22,514	282,997	2,202	3,954			also marble	49,512	314,935	36,390	472,020		196,375	Mineral water, natural gas, petroleum, quicksilver.
1924	[1]		[1]		14,417	20,481	24,271	217,172	5,341	5,666			[1]		259,023	[1]			648,059	Limestone, magnesite, mineral water, natural gas, quicksilver.
1925	[1]		[1]		13,828	22,594	24,250	251,059	1,516	3,216			[1]		453,273	[1]			590,718	Limestone, magnesite, mineral water, natural gas, quicksilver.
1926	[1]		[1]		[1]				[1]						478,231	[1]			197,998	Clay and clay products.
																			352,277	Magnesite, mineral water, natural gas, quicksilver, petroleum.
1927			[1]		11,994	14,212	20,254	199,472	4,373	4,261					457,703	[1]			345,228	Magnesite and mineral water.
1928	[1]		[1]		13,746	15,121	14,622	157,732	3,058	2,053			[1]		467,555	[1]			379,070	Limestone, magnesite, mineral water, quicksilver.
1929	[1]		10,760	1,076	[1]		14,063	168,872	13,871	13,871			[1]		332,902	[1]			446,757	Limestone, magnesite, natural gas, petroleum, quicksilver, salt.
1930	[1]		[1]		[1]		11,592	113,150	3,607	2,259			[1]		409,718	[1]			359,202	Limestone, magnesite, mineral water, natural gas, petroleum, quicksilver.
1931	[1]		[1]		[1]			82,127	2,665	1,826					403,453	[1]			178,894	Limestone, magnesite, mineral water, natural gas, petroleum, quicksilver.
1932	123	6,459	[1]		12,945	7,125	2,858	25,281	[1]				17,250	53,690	220,482	[1]			8,500	Magnesite, pottery clay, mineral water.
1933	[1]				[1]		6,395	46,384	[1]				30,646	71,557	361,635	[1]			54,635	Magnesite, pottery clay, petroleum, quicksilver.
1934	39	2,813			[1]			54,154	701	442			26,809	84,033	190,958	[1]			54,045	Magnesite, natural gas, petroleum.
Totals	[4]1,151,338	$54,291,274	[4]1,949,134	$292,391	[5]512,507	$484,387		$4,931,799	[6]68,220	$138,334	451,850	$598,292	[4]134,233	$328,342	$5,802,909	183,837	$2,109,967		$5,861,218	

[1] Includes crushed rock, rubble, sand, gravel.
[2] See under 'Unapportioned.'
[3] Estimated production of Guadalupe Mine previous to 1875.
[4] Erroneously credited to Alameda County in reports of those years.
[5] Flasks of ½ pounds previous to June, 1904: of 75 pounds thence, through 1927: of 76 pounds since January, 1928.

MINERAL PRODUCTION OF SHASTA COUNTY, 1880-1934

Year	Brick		Chromite		Copper		Gold, value	Lime		Limestone		Mineral water		Pyrites		Silver, value	Miscellaneous stone[1], value	Miscellaneous and unapportioned		
	M	Value	Tons	Value	Pounds	Value		Barrels	Value	Tons	Value	Gallons	Value	Tons	Value			Amount	Value	Substance
1880							$140,455									$117,907				
1881							350,000									85,000				
1882							300,000									80,000				
1883							210,000									20,000				
1884							320,000									30,000				
1885							417,004									9,223				
1886							699,508									10,647				
1887							627,681									40,204				
1888							600,000									50,000				
1889							415,631									5,396				
1890							420,530									7,279				
1891							554,063									7,432				
1892							574,833									7,977				
1893							500,407									8,577				
1894			1,200	$16,800			617,436					150,000	$75,000			5,032		200 tons	$1,500	Iron ore.
1895			90	1,120			718,696									28,417				
1896	300	$1,500			1,847,087	$184,708	599,209	2,310	$2,541							24,233	$1,400			
1897	1,200	7,200			13,592,610	1,535,966	569,071	2,100	2,100	9,000	$13,500					96,869				
1898	1,200	7,200			21,442,000	2,465,830	860,180	2,500	3,750			3,000	2,000			171,768				
1899	2,000	14,000			21,835,863	3,565,023	873,719	8,000	10,000	250	375	5,000	1,850			196,213	375	100 sq'rs	800	Slate.
1900	2,000	12,000	140	1,400	25,736,473	4,166,735	733,467	17,850	17,850	1,150	1,150	9,640	5,784			635,640				
1901	3,000	12,000	130	1,950	30,990,781	4,881,048	927,975	21,600	12,960			26,295	7,644			891,994	2,000			
1902	2,450	12,250	315	4,275	21,515,887	2,496,731	878,706	18,500	12,500	3,500	3,600	26,295	7,645	3,202	$7,005	306,887				
1903	3,500	17,500	150	2,250	16,453,409	2,171,497	771,242	27,000	10,800	5,400	5,400	40,000	12,000	2,500	5,500	203,991	1,500			
1904	3,000	15,000	98	1,470	26,438,145	3,439,974	1,031,429	18,000	10,500							399,660			47,723	Unapportioned, 1900-1909.
1905	3,500	14,000	20	300	10,830,865	1,688,614	684,952	10,700	8,000	3,600	3,600	80,000	12,000			167,548				
1906	4,400	22,000	80	1,200	22,477,304	4,338,121	819,144	12,800	8,040	27,000	32,960			32,689	89,895	434,483				
1907	4,500	33,000	260	5,200	27,844,364	5,568,873	791,997	29,222	31,900	30,761	30,761			65,788	197,364	370,211		400 tons	400	Iron ore.
1908	2,000	12,000	280	5,600	34,878,677	4,642,976	1,131,832	11,818	9,100	80,000	80,000	100,000	20,000	93,677	539,553	517,596	25,000			
1909	3,500	23,500	205	3,517	38,665,447	7,581,115	1,600,489	8,650	8,000	129,560	134,595	100,000	20,000	449,762	1,349,286	735,460	4,688			
1910	2,425	17,548	680	9,155	44,947,950	5,725,469	1,533,728	16,616	14,114	117,109	117,083	40,000	10,000	31,683	126,692	648,905		108 tons	174	Iron ore.
																		579 tons	900	Iron ore.
1911	2,825	20,094	875	13,697	29,539,913	3,692,489	[2]1,059,881	13,271	10,164	97,924	65,253	25,000	6,250	47,885	151,602	386,991		1,856 lbs.	83	Lead.
1912	1,697	10,195	1,000	8,000	25,249,892	4,166,232	988,803	6,529	3,548	58,022	45,575	23,225	5,646	62,605	174,402	425,382		881 lbs.	40	Lead.
1913	360	4,330	280	2,800	27,686,436	4,291,708	1,208,870	8,595	7,030	41,346	35,616	30,000	6,850	72,071	194,409	448,031		47 tons	1,175	Asbestos.
																		19,070 lbs.	839	Lead.
																			10,686	Other minerals.
1914	1,594	10,223	867	4,884	25,122,766	3,341,328	1,101,202	8,057	5,163	36,997	30,026	30,000	6,850	69,438	195,362	346,706	125	1,436 tons	5,128	Iron ore.
																		21,565 lbs.	841	Lead.
																		180,936 lbs.	8,504	Lead.
1915	1,836	11,550	1,757	17,570	30,828,917	5,395,060	1,120,848	[3]		44,953	40,945	12,000	1,800	[3]		459,566	1,418	8,378,401 lbs.	1,038,922	Zinc.
																			253,950	Iron ore, pyrites, lime.
																		478,560 lbs.	33,021	Lead.
																			57,303	Lime and limestone.
1916	[3]		12,425	181,225	39,437,196	9,701,550	936,885	[3]		[3]				[3]		1,115,471	800	9,484,800 lbs.	1,270,963	Zinc.
																			342,290	Asbestos, brick, iron ore, manganese, mineral water, platinum, pyrites, silica.
																		8,725 lbs.	750	Lead.
																			78,101	Lime and limestone.
1917	[3]		3,116	68,479	28,009,990	7,646,727	775,125	[3]		[3]				[3]		520,703	800	14 ozs.	1,100	Platimun.
																		8,281,516 lbs.	844,715	Zinc.
																			308,369	Cadmium, brick, iron ore, mineral water, moybdenum, pyrites, silica.
																		492,565 lbs.	34,972	Lead.
																		35 ozs.	2,709	Platinum.
1918	[3]		1,423	70,214	25,294,590	6,247,764	543,509			45,071	72,410			[3]		420,410	7,000		277,158	Zinc.
																		3,015,692 lbs.	422,525	Cadmium, brick, iron ore, lime, mineral water, molybdenum, pyrites.
																			29,100	Lime and limestone.
1919	[3]				8,673,342	1,613,242	378,283	[3]		[3]		[3]		138,046	497,398	165,802	31,750	121 fine ozs	21,075	Platinum.
																			40,153	Barytes, brick, iron ore, lead, mineral water, zinc.
																		64,400 lbs.	5,152	Lead.
1920	[3]				810,843	149,195	312,901							135,399	475,330	36,563	32,650	158 fine ozs.	27,004	Platinum.
																			69,743	Asbestos, brick, iron ore, lime, limestone, zinc.
1921					437,593	56,449	267,681	[3]		[3]				[3]		5,581	31,945	219 fine ozs.	26,817	Platinum.
																			452,589	Asbestos, barytes, iron ore, lead, pyrites, zinc.
1922					1,827,875	246,763	393,034							[3]		20,901	65,525	496 fine ozs.	57,458	Platinum.
																			723,910	Asbestos, barytes, iron ore, lead pyrites, zinc.
1923					3,437,963	505,381	359,487							[3]		47,706	86,500	328,115 lbs.	22,968	Lead.
																		299 fine ozs	43,326	Platinum.
																			498,019	Asbestos, barytes, iron ore, lime, limestone, pyrites.
1924					21,109,958	2,765,405	346,622			28,097	36,480			[3]		343,402	587,637	6,615 lbs.	529	Lead.
																		27 fine ozs.	3,361	Platinum.
																			671,228	Asbestos, coal, diatomaceous earth, iron ore, pyrites, zinc.
																		647,886 lbs.	56,366	Lead.
																		8 fine ozs.	725	Platinum.
1925					14,565,967	2,068,367	235,013			24,395	28,480			[3]		208,818	349,617	11,090,430 lbs.	842,873	Zinc.
																			510,190	Chromite, diatomaceous earth, iron ore, pyrite, talc.
																		15,584 lbs.	1,247	Lead.
																		28 fine ozs.	3,034	Platinum.
1926					5,113,114	715,836	132,906							[3]		110,719	162,355	17,757,000 lbs.	1,331,775	Zinc.
																			428,272	Coal, diatomaceous earth, iron ore, limestone, pyrite, talc.
1927					4,524,906	592,763	191,900			[3]				[3]		70,261	134,678	1,780 lbs.	112	Lead.
																		25 fine ozs.	2,552	Platinum.
																			957,822	Diatomaceous earth, limestone, pyrite, talc, zinc.
1928			[3]		3,049,910	439,194	113,194							[3]		39,431	137,034	4,400 lbs.	255	Lead.
																			385,683	Chromite, coal, diatomite, platinum, pyrite.
1929			[3]		6,066,098	1,067,633	89,689							[3]		31,048	247,351		315,475	Asbestos, chromite, diatomite, platinum, pyrite.
1930					3,902,383	515,110	226,214							[3]		5,442	228,778		135,602	Platinum, pyrite.
1931					309,314	28,148	331,165							[3]		2,816	154,163		149,794	Barite, granite, lead, platinum, pyrite.
1932					295,981	18,047	529,635									3,973	58,306		125	Unapportioned.
1933					885,108	54,727	618,290							[3]		6,884	233,110	14,883 lbs.	551	Lead.
1934					388,775	31,102	718,583							[3]		16,816	147,070		199,873	Platinum, pyrite.
																			231,609	Lead, platinum, pyrite.
Totals	47,287	$277,090	[4]25,391	$421,106	686,125,692	$109,913,500	$34,251,404	244,778	$188,060	711,064	$715,399	700,455	$201,319	1,205,645	$4,003,798	$11,559,972	$2,733,575		$13,292,008	

[1] Dredge production included under Stanislaus County.
[2] See under 'Unapportioned.'
[4] Includes crushed rock, rubble, rip-rap, sand and gravel.

MINERAL PRODUCTION OF SIERRA COUNTY, 1880-1934

Year	Gold, value	Silver, value	Miscellaneous stone[1], value	Miscellaneous and unapportioned		
				Amount	Value	Substance
1880	$974,332	$576				
1881	950,000	6,000				
1882	1,100,000					
1883	1,075,000					
1884	1,177,349	145				
1885	1,433,881	11				
1886	1,967,152	2,414				
1887	1,502,469	202				
1888	1,250,000	1,500				
1889	1,446,486	1,222				
1890	733,528	2,039				
1891	701,702	811				
1892	688,464	26				
1893	839,343	46				
1894	604,722					
1895	694,470	107				
1896	786,175	424				
1897	370,208	46				
1898	399,063	519				
1899	450,115	359				
1900	659,696	3,463				
1901	575,427	755				
1902	326,155	311		24,000 gals.	$6,000	Mineral water.
1903	310,770	476				
1904	374,763	1,222				
1905	517,303	3,687				
1906	409,366	2,518				
1907	483,904	2,621		120,000 gals.	12,000	Mineral water.
1908	412,626	1,917				
1909	189,672	957				
1910	312,035	1,330				
[1]	461,513	5,604				
1912	732,988	2,777		1,285 lbs. 9,919 lbs.	212 446	Copper. Lead.
1913	1,006,573	4,305		2,228 lbs.	98	Lead.
1914	730,000	3,900				
1915	726,362	3,156				
1916	724,256	3,291			1,950	Other minerals.
1917	384,428	1,629		13,031 lbs.	3,558	Copper.
1918	289,368	2,121		807 tons	40,012	Chromite.
1919	301,172	2,957	$750			
1920	442,894	3,967				
1921	612,267	5,236	2,858			
1922	1,753,242	14,484	2,900			
1923	878,164	6,134	2,312			
1924	799,276	5,198	8,000		2	Other minerals.
1925	1,373,705	8,919	3,677			
1926	564,452	2,913	2,150			
1927	678,873	3,350	70,300		10	Other minerals.
1928	674,855	3,614	1,433		24	Unapportioned.
1929	367,396	1,783	21,223			
1930	589,249	1,056	15,265		15	Unapportioned.
1931	651,754	1,661	37,500			
1932	590,294	2,268	12,965	5,395 lbs. 69,490 lbs.	340 2,005	Copper. Lead.
1933	445,102	1,173	2,833	599 lbs.	38	Copper.
1934	1,027,582	4,546	14,040	757 lbs. 2,104 lbs.	61 78	Copper. Lead.
Totals	$40,521,941	$130,846	$198,456		$76,849	

[1] Includes crushed rock, macadam, ballast, rubble, rip-rap, sand, gravel.

Year	Gold, value	Silver, value	Chromite		Mineral water	
			Tons	Value	Gallons	Value
1880	$440,735	$95,340				
1881	850,000	1,500				
1882	720,000					
1883	400,000					
1884	475,000					
1885	338,659					
1886	342,677	64				
1887	606,859	177				
1888	625,000					
1889	915,294	370				
1890	860,303	23				
1891	957,220	120				
1892	1,013,332	56				
1893	799,108					
1894	760,782					
1895	950,006	177			200,000	$80,800
1896	1,091,265	653			[3]	
1897	842,123	34			[3]	
1898	768,804	321			[3]	
1899	991,771	100			[3]	
1900	951,397	[2]6,700			700,000	45,000
1901	886,043	[2]2,980			700,000	175,000
1902	906,989	233			750,000	187,500
1903	613,576	22			750,000	50,000
1904	892,685	1,230			750,000	50,000
1905	803,035	2,499			[3]	
1906	[3]	[3]			[3]	
1907	398,017	3,037			725,000	36,250
1908	504,156	6,125			700,000	80,000
1909	416,160	2,145			500,000	10,000
1910	437,376	2,322			500,000	60,000
1911	422,297	2,561			700,000	120,000
1912	472,314	2,980	220	$2,310	700,000	120,000
1913	[4]180,125	[4]1,228			700,000	120,000
1914	312,842	1,026			650,000	65,000
1915	426,716	2,081	[3]		626,680	62,990
1916	441,307	2,312	2,251	28,731	502,650	50,530
1917	325,550	16,883	2,046	49,797	503,000	50,600
1918	294,227	14,501	6,612	336,588	501,750	50,175
1919	226,525	17,049	510	13,379	451,500	90,375
1920	80,707	5,218	215	5,732	300,150	60,015
1921	42,635	294	[3]		250,150	5,015
1922	75,105	612				
1923	45,633	298			200,150	4,042
1924	63,570	296				6,100

SISKIYOU COUNTY, 1880–1934

Platinum group metals		Miscellaneous stone[1], value	Miscellaneous and unapportioned		
Ounces	Value		Amount	Value	Substance
100	$600				
				$1,202,742	Unapportioned, 1900-1909
			200 lbs.	23	Copper
1.6	21				
5.3	93		2,500 cu. ft.	1,250	Sandstone.
			2,500 cu. ft.	1,500	Sandstone.
			193 lbs.	39	Copper.
			2,643 lbs.	140	Lead.
		$39,000	11,433 cu.ft.	12,897	Sandstone.
			1,000 bbls.	1,000	Lime.
			220 tons	300	Limestone.
			4,949 lbs.	1,183	Lead.
			1,800 cu. ft.	1,485	Sandstone.
			1,090 lbs.	1,680	Lime.
			3,360 lbs.	144	Lead.
			50 tons	500	Pumice.
		5,028	1,050 cu. ft.	1,750	Sandstone.
			100 bbls.	300	Lime.
			2,225 tons	2,200	Limestone.
				14,745	Gems.
			1,204 cu. ft.	2,000	Sandstone.
		9,475	335 bbls.	735	Lime.
			35 tons	525	Limestone.
				1,000	Gems.
			150 bbls.	120	Lime.
		6,580	24 tons	24	Limestone.
			650 cu. ft.	455	Sandstone.
			250 cu. ft.	250	Sandstone.
		609		250	Gems.
				250	Gems.
		4,883	90 tons	2,000	Pumice.
				1,500	Other minerals.
			100 tons	500	Coal.
9	304	5,371	58 lbs.	2	Lead.
			677 bbls.	629	Lime.
			250 cu. ft.	150	Sandstone.
			188 lbs.	9	Lead.
		4,630	745 bbls.	745	Lime.
				16,923	Chromite, copper, marble, sandstone.
[2]		45,407		12,609	Copper, building stone, lime, platinum, sandstone.
				500	Granite.
15	709	134,382	888,043 lbs.	242,436	Copper.
			192 lbs.	17	Lead.
				8,535	Lime, sandstone, soda.
1	58	24,588	573,593 lbs.	141,677	Copper.
				15,473	Lead and pumice.
7	1,015	26,405		111,294	Copper, limestone, pumice, quicksilver.
		30,322		47,121	Copper, lime, limestone, potash, pumice, quicksilver.
[3]		44,343		1,060	Asbestos, brick, chromite, lime, platinum.
		21,726		4,020	Other minerals.[5]
3	339	129,291		1,408	Other minerals.[6]
		67,787		3,034	Other minerals.[7]

Year	Gold, value	Silver, value	Chromite		Mineral water	
			Tons	Value	Gallons	Value
1925	$180,120	$831			[3]	
1926	141,240	709			[3]	
1927	138,822	586			[3]	
1928	85,717	421			[3]	
1929	63,843	863			[3]	
1930	70,332	4,172			[3]	
1931	74,326	169			[3]	
1932	133,115	304			[3]	
1933	324,954	686			[3]	
1934	528,395	1,861			[3]	
Totals	$26,708,789	$204,169	11,854	$436,537	[3]12,361,030	$1,579,392

[1] Includes crushed rock, rubble, rip-rap, sand, gravel.
[2] Recalculated to 'commercial,' from 'coining value' as originally published.
[3] See under 'Unapportioned.'
[4] Production from dredging operations included in Stanislaus County production.

SISKIYOU COUNTY, 1880-1934—Continued

Platinum group metals		Miscellaneous stone[1], value	Miscellaneous and unapportioned		
Ounces	Value		Amount	Value	Substance
				$3,535	Lime and limestone.
[5]		$23,800		11,340	Mineral water, platinum, sandstone.
16	$1,780	327,569		22,853	Coal, lead, mineral water, sandstone.
10	690	102,428		56,420	Mineral water, sandstone.
		370,833		14,195	Copper, lead, gems (rhodonite), mineral water.
		110,878		54,205	Copper, lead, limestone, quicksilver, mineral water.
		85,851		75,046	Copper, lead, granite, mineral water, gems, platinum, quicksilver, lime, pumice.
		79,772		32,740	Other minerals.
		23,415		27,185	Lead, quicksilver, mineral water.
		29,036		19,502	Copper, lead, mineral water, pumice.
		67,216		50,694	Copper, lead, mineral water, pumice, tube mill pebbles.
167.9	$5,609	$1,780,625		$2,228,844	

[5] Includes limestone and mineral water.
[6] Includes lead and lime.
[7] Includes coal, limestone, lime and platinum.

Year	Quicksilver		Mineral water		Lime and limestone	
	Flasks	Value	Gallons	Value	Tons	Value
1873	1,800	$144,594				
1874	1,900	199,842				
1875	2,100	176,715				
1876	1,683	74,052				
1877	1,463	54,570				
1878	802	26,386				
1879	1,290	38,507				
1880	492	15,252				
1881						
1882						
1883						
1884						
1885						
1886						
1887						
1888						
1889						
1890						
1891						
1892						
1893						
1894					6,400	$8,000
1895					4,300	4,635
1896			3,094	$1,547	5,477	5,989
1897					9,608	9,801
1898					6,125	5,570
1899			20,000	4,000		356
1900			20,000	4,000	1,800	1,800
1901			17,800	4,450		5,950
1902	42	1,890	10,000	4,000		
1903	100	4,100	10,000	4,000		
1904	[2]377	15,080	10,000	4,000		
1905	542	18,518	10,000	4,000	100,000	100,000
1906	528	19,272	4,000	4,000		
1907	640	24,422	40,000	4,000		
1908	764	33,294	140,000	11,600		
1909			32,650	5,490		
1910			32,400	3,960		
1911			30,000	4,000		
1912			285,050	44,000		
1913			23,600	3,440		
1914	320	15,696	43,020	5,208	86,128	86,128
1915	[3]		64,200	8,000		
1916	660	61,710	11,200	3,750		
1917	554	52,765	10,960	2,580		
1918	593	59,122	11,440	2,722		
1919	[3]		[3]			
1920	[3]		[3]		[3]	
1921			[3]			
1922			[3]			
1923	[3]		[3]			
1924			[3]			
1925			[3]			
1926			[3]			
1927			[3]			
1928			[3]			
1929			[3]			
1930	[3]					
1931						
1932						
1933						
1934						
Totals	[2]16,650	$1,035,787	[2]829,324	$132,747	[2]219,838	$228,229

[1] Includes crushed rock, rubble, paving blocks, sand, gravel.
[2] Flasks of 76½ pounds previous to June, 1904; of 75 pounds thence, through 1927; of 76 pounds since January, 1928.
[3] See under 'Unapportioned.'

SOLANO COUNTY, 1873-1934

Miscellaneous stone[1], value	Natural gas, value	Miscellaneous and unapportioned		
		Amount	Value	Substance
$225				
19,650				
15,752		75 tons	$125	Pottery clay.
20,975		400 tons	500	Pottery clay.
15,065				
12,181				
18,900				
2,200				
14,250		75,000 bbls.	150,000	Cement.
21,514		250,000 bbls.	375,000	Cement.
11,113				
78,573				
143,487				
202,146	$6,584	125 tons	600	Salt.
		3,000 M	25,000	Brick.
527,319	8,053	400 tons	2,800	Salt.
		1,000 M	7,000	Brick.
		100 tons	200	Salt.
176,813	7,538	1,600 M	20,000	Brick.
		5,600 tons	11,200	Clay.
241,949	9,100	50 tons	150	Salt.
		100 tons	300	Salt.
181,952	8,596	500 M	4,000	Brick.
		50 tons	100	Salt.
130,445	8,528	2,200 M	20,000	Brick.
28,915	7,366		13,570,019	Unapportioned, 1900-1913, inclusive.
71,288	5,546		1,500,000	Other minerals.
37,576	[3]		1,290,347	Cement, fuller's earth, natural gas, quicksilver, salt.
49,711	[3]		1,090,164	Cement, natural gas, salt.
39,826	[3]		1,804,060	Cement, fuller's earth, natural gas, salt.
30,124	[3]		1,378,758	Cement, fuller's earth, natural gas, onyx, salt.
44,156	[3]		1,627,928	Cement, fuller's earth, mineral water, natural gas, quicksilver.
[3]	[3]		2,930,614	Cement, limestone, onyx, mineral water, natural gas, quicksilver, miscellaneous stone.
60,604			2,969,594	Cement, mineral water, onyx.
103,394			3,004,720	Cement, mineral water, onyx.
113,545			3,263,340	Cement, mineral water, onyx, quicksilver.
117,475			2,972,000	Cement, mineral water, onyx.
145,484			2,678,547	Cement, mineral water, onyx.
			1,770,820	Onyx, travertine, cement, mineral water.
[3]			1,557,840	Cement, clay (pottery), mineral water, miscellaneous stone, travertine.
[3]			57,451	Mineral water, onyx, travertine, miscellaneous stone.
[3]			66,421	Mineral water, onyx, travertine, miscellaneous stone.
[3]			46,638	Onyx, travertine, quicksilver, miscellaneous stone.
[3]			62,270	Onyx, travertine, miscellaneous stone.
[3]			36,202	Onyx, travertine, miscellaneous stone.
[3]			16,996	Onyx, travertine, miscellaneous stone.
[3]			23,641	Onyx, travertine, miscellaneous stone.
[3]$2,677,007	[3]$61,311		$44,335,345	

MINERAL PRODUCTION OF

Year	Quicksilver		Mineral paint		Brick	
	Flasks	Value	Tons	Value	M	Value
1873	50	$4,017				
1874	1,700	178,806				
1875	1,218	102,495				
1876	3,897	171,468				
1877	3,609	134,616				
1878	3,255	106,890				
1879	2,977	88,923				
1880	1,445	44,795				
1881	1,273	37,974				
1882	2,124	59,960				
1883	1,669	47,984				
1884	332	10,126				
1885	446	13,715				
1886	735	26,093				
1887	689	29,196			1,000	$5,000
1888	1,151	48,918			1,000	5,000
1889	1,345	60,525				
1890	1,046	54,915				
1891	1,660	75,115				
1892	1,630	66,357				
1893	1,445	53,104				
1894	1,368	41,998	100	$3,500	375	1,875
1895	1,813	70,707	225	3,375	350	1,750
1896	1,126	37,150	220	3,740	250	1,250
1897	1,538	59,982	270	3,780	[3]300	1,500
1898	1,704	63,048			350	2,800
1899	2,119	105,950			200	1,800
1900	2,209	99,500			280	2,360
1901	2,130	95,850			150	1,200
1902	1,440	64,685	30	105	150	1,200
1903	2,404	98,676	800	320	160	1,440
1904	[2]2,700	102,829			175	1,750
1905	2,504	97,041			500	4,000
1906	2,070	75,555			6,800	115,000
1907	560	21,369			11,600	133,479
1908	590	24,939			11,000	83,000
1909	344	14,226			6,500	29,000
1910	260	11,765				
1911	94	4,325				
1912	646	27,158				
1913	12	48				
1914	13	638				
1915	159	21,793				
1916	1,039	97,140				
1917	2,592	24,481				
1918	2,417	28,223				
1919	1,418	119,142				
1920	[4]					
1921	[4]					
1922	[4]					
1923	528	31,147				
1924	867	60,840				
1925	351	29,134				
1926						
1927	373	43,068				
1928	[4]					
1929	[4]					
1930	[4]					
1931	449	39,392				
1932	247	11,642				
1933	[4]					
1934	393	27,288				
Totals	[3]572,253	$3,539,601	1,645	$14,820	41,140	$393,404

[1] Includes crushed rock, rubble, rip-rap, paving blocks, sand, gravel.
[2] Eleventh Census Report, Vol. X, Part 3, p. 605.
[3] Estimated.

SONOMA COUNTY, 1873-1934

Mineral water		Miscellaneous stone[1], value	Magnesite		Miscellaneous and unapportioned		
Gallons	Value		Tons	Value	Amount	Value	Substance
		[6]					
		$350,000					
		367,500					
		[2]297,236					
		[3]245,000					
		[3]150,000					
		96,000					
		92,800					
		57,381					
8,000	$32,500	69,508					
14,400	19,287	73,719					
236,000	24,000	33,035					
246,680	23,490	43,371					
21,000	18,500	16,830					
575,000	35,000	20,275					
60,900	17,691	52,701	175	$1,225	64 tons	$4,460	Graphite.
30,000	9,100	121,578	130	455	42 tons	1,680	Graphite.
10,000	4,000	90,933					
11,000	4,400	75,947			1,500 bbls.	2,250	Lime.
10,000	4,000	213,830					
10,000	4,000	158,218				300	Gems.
					1,500 bbls.	2,600	Lime.
12,000	4,200	132,946	250	1,250		50	Gems.
					10,500 tons	10,700	Clay.
10,000	1,000	307,695	15	180	2,600 tons	3,000	Clay.
104,000	21,350	319,716			500 tons	5,500	Clay.
						15,000	Unapportioned, 1900-1909.
235,000	50,350	220,998					
202,500	50,250	184,035				1,000	Unapportioned.
62,500	20,950	295,198	300	3,000			
96,240	46,910	191,436					
80,015	46,160	276,516	213	2,130		700	Other minerals.
258,600	41,231	177,917	3,624	34,788		375	Other minerals.
					243 tons	2,478	Chromite.
121,366	28,031	232,113	11,653	98,280		14,000	Building stone, manganese.
					226 tons	6,200	Chromite.
121,290	35,031	146,621	5,636	61,335	362 tons	12,689	Manganese.
						64	Other minerals.
					1,540 tons	73,906	Chromite.
83,220	36,050	148,347	4,110	40,010	173 tons	7,645	Manganese.
						100	Other minerals.
96,800	22,820	144,014				62	Building stone, curbing.
29,928	6,578	217,667	[5]			63,000	Magnesite, quicksilver.
37,641	9,891	151,300	[5]			14,360	Gems, magnesite, quicksilver.
35,843	9,108	162,679				50,154	Pottery clay, gems, quicksilver.
30,661	7,106	189,059					
31,003	8,002	101,009				2,200	
17,713	6,679	119,546				4,872	Pottery clay, building stone, manganese.
36,272	7,752	208,479				6,355	Pottery clay, gems, manganese ore, petroleum, quicksilver.
25,428	5,889	208,753				7,682	Petroleum, sandstone.
						6,250	Sandstone.
32,720	9,127	111,429				85,763	Chromite, gems, quicksilver.
						13,351	Sandstone.
20,701	7,376	243,383				87,208	Chromite, gems, quicksilver.
17,900	5,318	263,644				61,437	Quicksilver, sandstone.
44,576	8,227	204,702				315	Unapportioned.
15,864	4,123	151,734				350	Unapportioned.
23,016	2,390	147,266				8,332	Grenite (tuff), quicksilver.
12,944	2,786	130,616				1,375	Unapportioned.
3,128,721	$700,653	$8,014,680	[4]25,236	$242,653		$577,763	

[4] Flasks of 76½ pounds previous to June, 1904; of 75 pounds thence, through 1927; of 76 pounds since January, 1928.
[5] See under 'Unapportioned.'
[6] There was a considerable production of paving blocks in Sonoma County in the 70's and 80's, but no available records of annual amounts or values.

MINERAL PRODUCTION OF

Year	Gold, value	Silver, value	Brick		Magnesite		Manganese	
			M	Value	Tons	Value	Tons	Value
1880	$73,271							
1881	63,000	$31,000						
1882	80,000	15,000						
1883	40,000	5,000						
1884	40,000	5,000						
1885	18,660							
1886	47,175							
1887	53,297							
1888	75,000							
1889	20,410							
1890	5,335							
1891	3,000							
1892	14,191							
1893	150							
1894	26,369							
1895	26,482							
1896	16,635							
1897	37,392							
1898	19,400							
1899	10,000							
1900	[1]21,212							
1901	[1]15,700				100	$600		
1902								
1903	[1]52,869	256						
1904	[1]50,000	265						
1905	[1]50,000	240						
1906	[3]	[3]						
1907	3,364	28						
1908	[2]	[2]	750	$7,000				
1909	[2]	[2]	5,000	50,000				
1910	[1]214,187	[1]604	1,500	8,000				
1911	[4]307,538	[4]1,131	850	5,950				
1912	[1]226,163	[1]1,974	250	2,000				
1913	[5]253,166	[2]671	300	2,400				
1914	[2]	[2]	250	2,500				
1915	[3]	[3]						
1916	[3]	[3]	[3]				160	$2,400
1917	[3]	[3]			3,196	44,350	775	26,925
1918	14,196	592			2,024	18,038	5,753	222,422
1919	[3]	[3]			2,031	20,831	8,921	374,584
1920	142,467	775			4,064	39,435	893	12,973
1921	18,439	136			3,378	33,158	[3]	
1922	[3]	[3]			2,400	35,475	[3]	[3]
1923	174,814	833						
1924	190,019	773					[3]	
1925	171,742	694					[3]	
1926	127,398	411					[3]	
1927	120,238	345					[3]	
1928	195,683	556			[3]			
1929	128,872	344			[3]		[3]	
1930	109,134	208			[3]			
1931	154,443	223			[3]			
1932	152,865	194			[3]			
1933	148,204	241			[3]			
1934	239,158	544			[3]			
Totals	$4,057,638	$68,038	[3]8,900	$77,850	[3]17,093	$191,287	[3]16,502	$639,304

[1] Includes Merced County.
[2] See Merced County.
[3] See under 'Unapportioned.'
[4] Includes Merced County production; also dredge yield of Shasta and Trinity counties.
[5] Includes dredge production of Merced and Siskiyou counties.

STANISLAUS COUNTY, 1880-1934

Mineral paint		Miscellaneous stone, value	Miscellaneous and unapportioned		
Tons	Value		Amount	Value	Substance
					Quicksilver.[6]
105	$2,310				
375	2,800		20 flasks	$800	Quicksilver.
17	1,800				
152	1,825				
283	2,898				
204	1,769				
129	193				
200	375		79,330 lbs.	12,494	Copper.
200	350		162,400 lbs.	18,676	Copper.
1,370	2,400		116,000 lbs.	15,080	Copper.
200	1,600		7,300 lbs.	931	Copper.
				20	Platinum.
375	2,125				
250	1,720				
250	1,720				
285	2,000	74,000			
285	2,225	225		82,317	Unapportioned, 1900-1909.
40	270				
96	600				
100	600	63,572			
255	1,530	14,482			
52	286	3,096			
[3]		2,250		189,521	Gold, mineral paint, silver, platinum, quicksilver.
507	2,200	17,784		230,638	Chromite, brick, gold, platinum, quicksilver, silver.
[3]		6,240	1,438 tons	29,240	Chromite.
				183,167	Gold, mineral paint, platinum, silver.
498	3,088	38,764	1,352 tons	56,505	Chromite.
				308	Other minerals.
[3]		28,922		[11]65,989	Gold, mineral paint, platinum, silver.
669	7,062	181,262		1,043	Platinum and quicksilver.
[3]		180,697		3,777	Manganese, mineral paint, platinum, quicksilver.
[3]	[3]	299,962		116,730	Gold, manganese ore, mineral paint, platinum, silver.
1,023	10,745	231,965		27,158	Magnesite, manganese ore, platinum.
[3]		118,050		30,296	Magnesite, manganese ore, mineral paint, platinum.
[3]		221,256		21,774	Magnesite, manganese ore, mineral paint, platinum.
[3]		259,806		12,957	Magnesite, mineral paint, platinum.
				12,700	Magnesite, mineral paint, platinum.
[3]		238,067		37,852	Magnesite, mineral paint, platinum.
[3]		233,325		25,694	Clay (pottery), magnesite, manganese, mineral paint, platinum.
		180,379	165 lbs.	8	Lead.
				41,959	Clay (pottery), magnesite.
		87,596		35,019	Clay (pottery), magnesite, platinum.
		55,595	607 lbs.	18	Lead.
		40,888		109,514	Clay (pottery), magnesite, platinum.
		63,337		115,133	Clay (pottery), magnesite, platinum.
[3]7,920	[3]54,491	$2,902,751		$1,701,800	

[6] There was a small production of quicksilver in the 70's and between 1884-1888, but no definite record of amounts.

MINERAL PRODUCTION OF SUTTER COUNTY, 1908-1934

Year	Amount	Value	Substance
1908	5,000 tons	$5,000	Macadam.
1909			
1916	5,733 tons	6,450	Crushed rock.
1917	4,500 tons	5,000	Crushed rock.
1918			
1919			
1920		54	Other minerals.[1]
1921		54	Other minerals.[1]
1922		97	Unapportioned.[1]
1923		97	Unapportioned.[1]
1924		97	Unapportioned.[1]
1925		397	Unapportioned.[1]
1926		397	Unapportioned.[1]
1927		300	Unapportioned.
1928			
1933		11,900	Unapportioned.[1]
1934		3,322	Unapportioned.[1]
Total		$33,165	

[1] Includes miscellaneous stone and natural gas.

Year	Gold, value	Chromite		Brick	
		Tons	Value	M	Value
1880–1884	$22,000				
1894		1,680	$12,680		
1895		950	9,025	500	$2,500
1896		56	475		
1897					
1898				200	1,400
1899				300	1,800
1900				325	2,200
1901				300	2,000
1902				500	3,500
1903				600	4,500
1904				500	3,500
1905				650	5,000
1906				700	5,600
1907				400	3,200
1908				400	3,000
1909					
1910				600	3,600
1911					
1912				225	1,300
1913				300	1,800
1914					
1915		[2]		400	2,700
1916		1,896	39,702	[2]	
1917		2,053	41,646		
1918		3,261	152,291		
1919		[2]			
1920					
1921					
1922				[2]	
1923					
1924		[2]		[2]	
1925				[2]	
1926		[2]		[2]	
1927					
1928					
1929		[2]			
1930				[2]	
1931					
1932				[2]	
1933					
1934	1,146				
Totals	$23,146	[2]9,896	$255,819	[2]6,800	$47,600

[1] Includes crushed rock, rubble, sand, gravel.
[2] See under 'Unapportioned.'

TEHAMA COUNTY, 1880-1934

Mineral water		Salt, value	Miscellaneous stone,[1] value	Miscellaneous and unapportioned		
Gallons	Value			Amount	Value	Substance
10,000	$2,400					
54,000	8,000					
10,000	18,000					
20,000	4,000					
5,000	2,500					
8,000	4,000					
8,000	4,000					
550,000	55,000					
20,000	2,000	$300				
5,000	500	300				
5,000	500	300				
5,000	500					
75	42		$600			
100	100	200				
1,000	500	[2]	750		$752	Chromite and salt.
[2]			11,076		3,575	Brick, granite, mineral water, natural gas.
			2,373			
			2,500		2,800	Other minerals.
			7,500		1,500	Other minerals.
			[2]		26,400	Unapportioned.
			30,520		300	Other minerals.
			[2]		9,388	Brick, miscellaneous stone.
			4,900		1,316	Other minerals.
			26,054		8,400	Brick, chromite.
			[2]		77,183	Brick, miscellaneous stone.
			2,100		8,240	Brick, chromite.
			4,450		900	Other minerals.
			11,945		2,444	Other minerals.
			9,956		4,524	Chromite and sandstone.
			218,300		8,100	Brick and sandstone.
			49,407		1,000	Other minerals.
			11,887		2,500	Brick and sandstone.
			30,309		25	Other minerals.
			38,427	3 ozs.	2	Silver.
[2]701,175	$102,042	[2]$1,100	$463,054		$159,349	

Year	Gold, value	Silver, value	Quicksilver	
			Flasks	Value
Altoona Mine, before 1875 (estimated)*	[6]	[6]	1,000	$88,000
1875			1,500	126,425
1876			1,979	87,076
1877			1,317	49,129
1878			1,534	50,469
1879			1,919	57,282
1880	$326,693	$142	245	7,595
1881	550,000	1,500		
1882	600,000			
1883	400,000			
1884	529,150	[2]334		
1885	338,148	10		
1886	464,726	219		
1887	553,051	924		
1888	589,000	500		
1889	811,632	640		
1890	1,192,790	259	240	12,600
1891	1,327,787	2,249		
1892	1,446,603	168		
1893	1,122,995			
1894	1,012,666	325		
1895	1,166,745	1,257	3,926	137,410
1896	1,296,330		4,205	139,035
1897	1,078,372	259	838	29,330
1898	859,255	314	4,032	151,200
1899	590,510	1,086	3,076	123,624
1900	571,605	[3]7,935	2,294	105,982
1901	684,683	[3]1,240	1,302	58,668
1902	719,992	550	240	10,251
1903	607,728	2,085	266	11,156
1904	574,814	135	[7]102	3,864
1905	690,844	3,044	389	13,917
1906	560,843	2,981	166	6,059
1907	535,316	2,399	98	3,739
1908	602,944	4,269	90	3,808
1909	520,046	2,302	197	7,015
1910	500,851	1,960	133	5,022
1911	612,149	6,777	44	2,024
1912	723,503	7,494	18	758
1913	431,862	2,119	4	161
1914	743,512	3,374		
1915	441,846	3,470	[4]	
1916	435,493	7,591	[4]	
1917	602,048	10,021	[4]	
1918	444,729	6,912	[4]	
1919	538,494	3,872	[4]	
1920	541,387	3,469	[4]	
1921	437,993	1,390		
1922	182,918	2,432		
1923	617,841	5,816		
1924	422,281	10,934		
1925	424,037	7,724		
1926	483,471	13,276		
1927	409,492	12,326		
1928	402,694	12,258		
1929	352,029	10,269	[4]	
1930	330,003	6,700	[4]	
1931	292,031	532	[4]	
1932	294,297	608	[4]	
1933	345,851	768	[4]	
1934	574,681	1,640	[4]	
Totals	$33,910,761	$180,860	[5]31,154	$1,293,099

* Bradley, W. W., Quicksilver resources of California; Cal. State Min. Bur., Bull. 78, p. 200, 1918.
[1] Includes crushed rock, rubble, sand, gravel.
[2] Lawver, A. M., in 'Production of Precious Metals in U. S.'; Report of Director of Mint, 1884, p. 175, 1885.
[3] Recalculated to 'commercial' from 'coining value' as originally published.

TRINITY COUNTY, 1875-1934

Platinum		Miscellaneous stone[1], value	Miscellaneous and unapportioned		
Ounces	Value		Amount	Value	Substance
			3,620 cu.ft.	$5,000	Granite.
			500 cu.ft.	375	Granite.
			5,750 cu.ft.	4,535	Granite.
			4,838 lbs.	761	Copper.
			6,870 cu.ft.	5,500	Granite.
39	$468				
13	200		100 cu.ft.	75	Granite.
11	275				
26	450				
7	130				
[4]					
[4]					
[4]				111,307	Unapportioned, 1900-1909.
[4]					
[4]					
[4]		$2,000			
[4]		1,000			
5	151			245	Mineral water.
13	435	900	120 gals.	360	Mineral water.
				52,500	Other minerals.
113	5,161	1,000		397,316	Chromite, copper, manganese, mineral water, quicksilver.
50	3,283	7,718	242 tons	6,325	Chromite.
				358,447	Copper, manganese, mineral water, quicksilver.
41	3,136	1,513	1,814 tons	75,660	Chromite.
				175,574	Copper, mineral water, quicksilver.
[4] [5] fine ounces		11,839		17,444	Copper, mineral water, platinum, quicksilver.
37	6,612	8,799		1,838	Other minerals.
27	3,260	[4]		14,239	Quicksilver, miscellaneous stone.
12	1,223	5,677		5,687	
18	2,050	3,000	329,706 lbs.	48,467	Copper.
11	1,839	2,240	550,000 lbs.	72,050	Copper.
26	3,081	5,000	439,766 lbs.	62,447	Copper.
28	2,832		760,140 lbs.	106,420	Copper.
				4,000	Other minerals.
		32,250	770,882 lbs.	100,986	Copper.
				800	Other minerals.
[4]		12,084	660,142 lbs.	95,060	Copper.
				8,084	Chromite and platinum.
		41,867	615,579 lbs.	108,342	Copper.
				13,367	Chromite, coal, quicksilver
[4]		4,238	588,574 lbs.	76,514	Copper.
				19,878	Coal, platinum, quicksilver.
31	993	20,246		14,720	Coal, quicksilver.
19	473	17,160	295 lbs.	8	Lead.
				12,729	Coal, quicksilver.
[4]		2,375		10,509	Coal, lead, platinum, quicksilver.
[4]		62,522	359 lbs.	29	Copper.
				11,748	Coal, platinum, quicksilver.
527	$36,052	$243,428		$2,004,346	

[4] See under 'Unapportioned.'
[5] The metal contained in the 1919 product was 38% iridium and 62% platinum.
[6] No county segregated figures for gold and silver available for years earlier than 1880.
[7] Flasks of 76½ pounds previous to June 1904; of 75 pounds thence, through 1927; of 76 pounds since January, 1928.

MINERAL PRODUCTION OF

Year	Gold, value	Silver, value	Brick		Gems, value	Granite	
			M	Value		Cubic feet	Value
1880	$1,125	$526					
1881	8,181	36					
1882	5,000	2,000					
1883	4,000	1,000					
1884	70,000						
1885	7,500						
1886	6,900	50					
1887	15,640	167					
1888	25,000						
1889	39,340	250					
1890	43,019						
1891	15,095						
1892	24,355	11					
1893	12,818						
1894						4,668	$10,000
1895	16,320					3,000	2,500
1896	20,092					2,800	4,700
1897	12,830	214				3,600	8,000
1898	12,400		300	$2,000		700	1,500
1899	13,610		600	4,200		1,200	3,000
1900	10,445	433	650	6,100		1,500	3,000
1901	14,616	100	1,600	8,600		9,000	18,000
1902	11,648		4,500	27,000	$500	1,790	4,000
1903	9,215		1,500	9,500	500	3,000	2,260
1904	1,100		1,250	10,000		7,000	16,000
1905	2,300	13	2,000	16,000	5,000	7,000	9,000
1906	20		1,500	12,000	209,790	7,000	9,000
1907			2,500	20,000	26,206		
1908			2,250	18,000	62,250		
1909			6,620	42,400	58,000		
1910			8,195	64,000	104,000	700	1,500
1911			10,225	81,000	20,000		
1912			10,900	70,500	5,350		
1913			6,000	45,000	1,500		
1914			6,838	47,507			
1915			5,520	33,364			
1916			6,330	48,500			[2]
1917			6,771	112,938			[2]
1918			[2]		[2]		[2]
1919			and tile	34,978			[2]
1920			[2]				
1921							[2]
1922			[2]				[2]
1923			[2]				[2]
1924			[2]				[2]
1925			[2]				62,260

[1] Includes crushed rock, rubble, sand, gravel.
[2] See under 'Unapportioned.'

TULARE COUNTY, 1880-1934

Magnesite		Miscellaneous stone[1], value	Miscellaneous and unapportioned		
Tons	Value		Amount	Value	Substance
			80 tons	$960	Limestone.
			1,000 bbls.	1,500	Lime.
200	$1,500		22 tons	88	Gypsum.
3,511	28,210				
2,450	19,250				
1,300	19,600	$100			
2,800	9,100			50,108	Unapportioned, 1900-1909.
2,380	21,420		400 tons	2,200	Gypsum.
6,567	52,642				
6,468	47,200		2,803 lbs.	360	Copper.
				185	Natural gas.
7,110	35,550		2,000 M cu.ft.	1,000	Natural gas.
7,763	57,335				
6,684	66,840		100 cu.ft.	200	Marble.
			80 tons	200	Quartz.
7,858	62,864	4,350	392 cu.ft.	796	Marble.
			1,429 tons	5,050	Feldspar.
			1,250 tons	2,400	Quartz.
9,650	96,500	1,750	2,830 tons	13,065	Feldspar.
			6 cu.ft.	30	Marble.
			1,349 tons	1,888	Limestone.
11,574	104,166	36,851	1,800 tons	6,500	Feldspar.
				1,830	Chromite and silica.
			3,435 tons	42,555	Chromite.
87,606	737,130	82,255	1,422 lbs.	350	Copper.
				36,410	Feldspar, granite, limestone, marble, silica.
			450 tons	11,000	Chromite.
136,562	1,238,853	75,594	240 tons	1,580	Feldspar.
				60,023	Building tile, copper, graphite, limestone, talc.
			600 tons	24,000	Chromite.
			444 tons	2,928	Feldspar.
28,826	269,748	125,407	8,400 tons	32,400	Limestone.
			204 tons	1,143	Silica.
				71,782	Brick, gems, granite, soapstone, talc, tile.
			10,347 tons	46,388	Limestone.
18,765	186,601	10,811	700 M cu.ft.	295	Natural gas.
				51,928	Chromite, feldspar, granite.
35,305	394,169	8,465	400 M cu.ft.	195	Natural gas.
				190,467	Brick, feldspar, granite, limestone.
			10,030 tons	40,090	Limestone.
11,454	125,594	284,122	380 M cu.ft.	190	Natural gas.
				102,238	Brick and granite.
			380 M	190	Natural gas.
17,223	181,842	151,000		189,662	Brick, tile, granite, limestone.
			380 M	190	Natural gas.
24,058	298,272	1,990	15,500 tons	57,500	Limestone.
				108,607	Brick, granite.
			1,080 M	540	Natural gas.
21,203	271,830	80,411		145,893	Brick, hollow tile, granite, limestone.
			280 M	175	Natural gas.
18,150	245,557	47,176	13,300	43,900	Limestone.
				27,911	Brick, lime.

Year	Gold, value	Silver, value	Brick		Gems, value	Granite	
			M	Value		Cubic feet	Value
1926			[2]				[2]
1927			[2]				[2]
1928			[2]		[2]		[2]
1929			[2]				[2]
1930	$36	$311			[2]		[2]
1931	244	2	[2]		[2]		[2]
1932	141	1	[2]		[2]		[2]
1933	2,152	14	[2]				[2]
1934	5,114	94	[2]		[2]		
Totals	$410,256	$5,222		[2]$713,587	[2]$493,096		[2]$154,720

TULARE COUNTY, 1880-1934—Continued

Magnesite		Miscellaneous stone[1], value	Miscellaneous and unapportioned		
Tons	Value		Amount	Value	Substance
			593 tons	$7,709	Lime.
13,378	$138,347	$73,881	18,000 tons	70,000	Limestone.
				107,983	Brick, hollow tile, granite, natural gas.
	[2]	15,082		459,391	Brick, hollow tile, granite, lime, limestone, magnesite.
	[2]	108,419		336,947	Brick, gems, granite, lime, limestone, magnesite.
	[2]	24,932		262,949	Brick, granite, limestone, magnesite.
[2]		74,500		178,297	Gems, granite, limestone, magnesite, petroleum.
[2]		75,778		121,092	Barite, brick and building tile, gems, granite, magnesite, limestone, petroleum.
		72,541		43,391	Barite, brick and building tile, copper, gems, granite, lime, petroleum, tungsten.
		136,859		39,588	Brick, granite, petroleum, tungsten.
			4,404 lbs	32	Copper.
		139,875	2,697 lbs	100	Lead.
				39,259	Barite, brick, gems, petroleum, tungsten.
[2]488,845	$4,710,120	$1,481,149		$3,045,328	

Year	Gold, value	Silver, value	Lime		Limestone	
			Barrels	Value	Tons	Value
1880	$461,861	$1,071				
1881	500,000	1,000				
1882	400,000					
1883	320,000					
1884	310,000					
1885	320,903	1,473				
1886	432,438	1,551				
1887	504,662	3,166				
1888	475,000	3,500				
1889	446,300	543				
1890	1,500,629	13,062				
1891	1,384,950	139				
1892	1,092,549	911				
1893	354,734	1,329				
1894	547,448	1,072				
1895	666,754	313				
1896	1,070,141	328				
1897	1,809,572	1,696				
1898	1,734,953	15,582				
1899	1,635,769	15,111				
1900	1,596,891	62,367				
1901	1,670,368	39,787				
1902	1,791,829	6,580				
1903	1,732,572	13,989	1,600	$1,600		
1904	1,563,907	12,963				
1905	1,291,726	21,348	500	1,000		
1906	1,039,675	8,476	500	1,000		
1907	806,875	6,453	110,000	125,000		
1908	798,752	11,732	60,000	69,500	1,233	$6,500
1909	925,703	4,384	60,000	60,000	15,057	28,942
1910	615,626	5,754	78,300	78,300	3,600	10,400
1911	1,093,484	13,243	75,000	70,000	4,319	13,609
1912	1,113,291	25,146	117,450	121,250	11,554	20,099
1913	974,409	24,381	75,000	85,000	12,446	20,676
1914	940,793	12,017	63,331	38,000	16,707	21,907
1915	1,058,103	13,480	[7]		8,859	11,349
1916	868,237	17,039	[7]		3,137	5,132
1917	321,085	7,808	[7]		3,287	6,481
1918	274,328	21,425	[7]		3,064	5,600
1919	471,021	11,076	[7]		[2]	
1920	254,569	6,007	[7]		7,494	15,288
1921	96,026	2,505	[7]		3,650	9,475
1922	222,366	2,976				
1923	261,936	2,801			3,140	7,680
1924	255,994	1,106			8,515	19,983
1925	155,592	614				[4]268,000
1926	119,873	1,119				
1927	40,209	302			[7]	
1928	36,807	185	[7]		[7]	
1929	70,957	2,735	[7]		[7]	
1930	67,691	300	[7]		[7]	
1931	77,902	180	[7]		[7]	
1932	93,939	214	[7]		[7]	
1933	107,736	280	[7]		[7]	
1934	269,256	1,147	[7]		[7]	
Totals	$39,048,191	$423,766	[7]641,681	$650,650	[7]106,062	$481,121

[*] Includes crushed rock, macadam, rubble, sand, gravel.
[1] Includes mineral paint and sandstone.
[2] Includes granite, lime, magnesite, marble.
[3] Includes clay, dolomite, granite, lime, marble.

TUOLUMNE COUNTY, 1880-1934

Marble		Copper		Miscellaneous stone[4], value	Miscellaneous and unapportioned[7]		
Cubic feet	Value	Pounds	Value		Amount	Value	Substance
					800 M	$2,288	Brick.
						1,301	Unapportioned, 1900-1909.
					400 lbs.	16	Lead.
7,000	$14,000	155,826	$17,920				
11,550	28,875				10,367 cu.ft.	14,020	Granite.
11,500	28,750				9,700 cu.ft.	9,700	Granite.
11,000	66,000				9,700 cu.ft.	9,700	Granite.
23,000	46,000				9,700 cu.ft. 197 tons	9,700 1,379	Granite. Chromite.
22,030	60,120						
18,503	47,165	140,000					
27,600	107,400	9,086	1,154		30 tons	180	Chromite.
17,360	45,400				2,502 lbs.	111	Lead.
18,966	50,398						
27,720	73,920						
37,312	93,726	893	138		893 lbs.	53	Lead.
21,830	38,202	45	6		89 lbs.	3	Lead.
					352 tons	2,352	Chromite.
[7]		27,667	4,842	$1,900	1,779 lbs.	84	Lead.
						79,328	Dolomite, lime, marble.
					285 tons	4,556	Chromite.
[7]		1,797	442	1,500	873 lbs.	60	Lead.
						107,296	Dolomite, lime, magnesite, marble.
					2,680 tons	54,290	Chromite.
[7]		32,840	8,960	3,800	997 lbs.	86	Lead.
						108,758	Dolomite, lime, magnesite, marble.
					4,269 tons	168,693	Chromite.
[7]		35,127	8,676	1,700		121,806	Lime, manganese, marble.
						110,746	Lime and limestone.
[7]		[7]		2,700		78,950	Chromite, copper, granite, marble.
[7]				28,696		209,354	Dolomite, lime, marble, platinum.
[7]				229,185		217,292	Dolomite, granite, lime, marble.
				246,460		293,136	Other minerals.[1]
				9,800		388,145	Other minerals.[2]
				12,500		339,573	Other minerals.[3]
				29,751		113,305	Other minerals.[5]
		2,332	326	56,097		438,583	Other minerals.[6]
[7]				31,416		360,489	Limestone, marble, slate.
[7]				9,090		330,196	Dolomite, lime, limestone, marble, pumice, slate.
[7]		82,383	14,499	11,415		271,914	Dolomite, lead, lime, limestone, marble, slate.
[7]		4,566	593	[7]	317 lbs.	16	Lead.
						249,722	Lime, limestone, marble, slate, miscellaneous, stone.
[7]		[7]		100,785		198,290	Chromite, copper, lime, limestone, marble, slate, soapstone.
[7]				87,814		118,491	Chromite, lime, limestone, marble, slate, soapstone.
[7]				11,020		145,943	Chromite, lime, limestone, marble, slate.
[7]				5,578		147,607	Chromite, lime, limestone, marble, slate.
[7]255,371	$699,756	[7]352,562	$57,561	[7]$881,252		$4,707,562	

[4] Includes lime.
[5] Includes dolomite, granite, marble.
[6] Includes granite, lead, lime, limestone, magnesite, marble, silica.
[7] See under 'Unapportioned.'

MINERAL PRODUCTION OF

Year	Gold, value	Petroleum		Natural gas		Asphalt and bituminous brick		Brick	
		Barrels	Value	M Cu. Ft.	Value	Tons	Value	M	Value
1880	$354	[2]							
1881	600								
1882									
1883									
1884									
1885									
1886									
1887									
1888									
1889									
1890	2,468								
1891	1,715								
1892									
1893									
1894		290,913	$367,822			248	$4,800		
1895		244,624	244,624			175	3,500		
1896		248,000	272,800						
1897		368,282	368,282						
1898		427,000	571,000			4,105	80,775	286	$2,228
1899	3,990	496,200	496,200			5,188	103,760	375	3,000
1900	2,562	443,000	398,700			1,466	31,670	230	1,700
1901	4,183	472,057	236,028			2,073	30,945		
1902	2,012	475,000	455,000			37	370		
1903	1,087	542,902	517,611			1,114	13,368	1,380	12,900
1904	2,700	518,000	465,682	1,800	$2,700	3,169	38,028		
1905	1,200	375,522	236,578	3,831	5,000	3,000	30,000	1,300	10,400
1906	[3]	311,000	155,500	3,500	1,000	3,700	37,000	1,675	11,650
1907		352,224	211,334	1,825	2,278			1,600	12,800
1908		289,625	217,219	3,625	4,531			200	1,500
1909		344,419	223,872	1,721	2,151			1,275	7,625
1910		492,147	319,898	545	681			1,190	36,945
1911		499,082	349,777	[4]29,580	2,958			900	5,100
1912		662,300	584,811	[4]55,068	4,163			550	3,575
1913		899,007	907,997	62,200	6,220			1,023	6,085
1914		943,929	991,125	100,000	6,000			449	3,102
1915		1,017,220	869,723	491,879	29,670			200	2,500
1916		943,499	985,956	806,540	133,867			[3]	
1917		996,501	1,313,388	1,033,564	152,550			[3]	
1918		1,339,342	1,982,226	858,457	150,885				
1919		1,685,073	2,755,094	1,038,574	252,240			[3]	
1920		1,989,681	4,988,130	1,521,448	214,280				
1921		2,167,326	5,869,119	2,127,476	360,443			[3]	
1922		2,933,685	5,236,628	3,583,818	536,502				
1923		3,610,794	4,109,084	4,162,318	470,261				
1924		3,958,010	5,279,985	5,995,760	633,352				
1925		9,221,846	15,769,357	20,144,646	1,953,163				
1926		16,994,275	25,695,344	41,559,144	4,080,040				
1927		19,996,841	23,536,282	71,036,201	6,951,273				31,832
1928		22,143,318	24,311,149	67,058,513	6,196,549			[3]	
1929	473	24,003,969	27,602,164	77,293,145	5 812,729			[3]	
1930	221	19,983,341	27,896,744	54,741,670	3,749,829			[3]	
1931	293	17,245,113	13,297,707	53,643 509	1,875,264				
1932	887	14,491,47[illegible]	12,277,793	40,432,752	2,393,920				
1933	1,193	14,793,286	12,398,253	39,539,382	1,957,634				
1934	4,435	12,007,550	11,331,335	40.767,122	2,032,849				
Totals	$30,373	201,187,37[illegible]	$236,058,021	528,099,613	$39,974,982	24,275	$374,216		$152,942

[1] Includes crushed rock rubble sand, gravel.

[2] Commercial production of petroleum in Ventura County began at least as early as 1874, in the Sulphur Mountain district, but detailed county segregations are not available for the early years.

VENTURA COUNTY, 1880-1934

Pottery clay		Sandstone		Miscellaneous stone[1], value	Miscellaneous and unapportioned		
Tons	Value	Cubic feet	Value		Amount	Value	Substance
		16,200	$16,500				
		33,200	20,000				
					250 tons	$6,500	Borax.
		12,500	6,250	$35,279			
		4,200	2,650	16,764	3,000 tons	60,000	Borax.
						4	Silver.
		3,200	1,600	22,500	50 tons	2,500	Mica.
		1,750	900	25,100	3,500 tons	140,000	Borax.
					50 tons	3,800	Mica.
		6,000	3,500	31,227	50 tons	3,000	Mica.
30	$45	2,300	1,380	60,490			
		1,320	792				
				20,880			
560	1,680			15,406			
				144,226		830,853	Unapportioned, 1900-1909.
		900	450	35,000			
1,900	1,900	4,658	2,325	750			
1,000	1,000	4,600	1,850				
3,000	2,990	300	150			1,530	Unapportioned.
		1,195	502				
				2,674		200	Other minerals.
[3]		[3]		14,200		1,407	Brick, clay, sandstone.
[3]		[3]		30,000		2,072	Brick and sandstone.
		[3]		52,900		300	Other minerals.
						4,500	Clay and clay products.
[3]		[3]		5,000		190	Other minerals.
[3]		[3]		25,265		500	Mineral paint and sandstone.
						3,985	Clay and clay products.
				11,250		472	Mineral paint and sandstone.
				62,888		1,060	Mineral paint and sandstone.
				88,211		12,128	Mineral paint and sandstone.
		[3]		173,337		2,720	Limestone.
				131,200			
373,000	93,250			339,435		300	Other minerals.
354,418	63,120			412,872			
238,914	238,910			332,195		37,872	Brick, building tile and granite.
						76,795	Brick and building tile.
232,886	197,152			255,183		13,500	Granite (flagstone).
					6 oz.	3	Silver.
						55,900	Unapportioned.
[3]				180,322	5 oz.	2	Silver.
						124,934	Brick, pottery clay, granite, limestone (shells).
					9 fine ozs.	3	Silver.
61,300	17,418			184,483		80,559	Brick and hollow building tile, granite (flagstone), limestone (marl).
					16 fine ozs.	5	Silver.
9,774	1,683			144,515		36,803	Brick and hollow building tile, granite (flagstone), limestone (marl), sandstone.
					1,631 lbs.	64	Lead.
[3]				164,999	54 fine ozs.	19	Silver.
						35,534	Brick, clay (pottery), granite, limestone (marl.)
[3]				291,845	10 fine ozs.	6	Silver.
						28,279	Brick and hollow building tile, clay (pottery and oil well drilling), granite, limestone (marl).
[2]1,276,782	$703,856	[2]92,323	$58,849	$3,311,216		$1,568,299	

[2] See under 'Unapportioned.'
[4] Quantity estimated, as only values given in reports of those years.

MINERAL PRODUCTION OF YOLO COUNTY, 1873-1934

Year	Quicksilver		Sandstone		Miscellaneous stone[1], value	Miscellaneous and unapportioned		
	Flasks	Value	Cubic feet	Value		Amount	Value	Substance
1873	[2]995	$79,928						
1874	3,000	315,540						
1875								
1876	965	42,460						
1877	1,516	56,547						
1878	1,640	53,956						
1879	1,110	33,134						
1880	422	13,082						
1881								
1894			2,500	$1,000				
1895			542	1,873				
1896			252	378				
1897								
1898			264	384				
1899			264	384				
1900			908	1,760				
1901			1,540	2,300				
1902			328	450				
1903			280	144				
1904			180	720				
1905			175	200				
1906			160	204				
1907			250	350				
1908			140	1,150				
1909								
1910								
1911								
1912								
1913								
1914	15	736						
1915	[3]				$1,200		$840	Other minerals.
1916					300			
1917	[3]				4,300		1,261	Other minerals.
1918	[3]				17,915		3,300	Other minerals.
1919	[3]				5,600		19,866	Other minerals.
1920					9,472			
1921					14,829			
1922					[3]		13,431	Unapportioned.
1923					[3]		16,957	Unapportioned.
1924					[3]		15,800	Unapportioned.
1925					23,060			
1926					20,560			
1927					17,895			
1928					17,200			
1929					14,400			
1930					2,700			
1931					21,500			
1932					21,625			
1933					16,694		129	Gold.
1934					37,850	1 fine oz.	1	Silver.
							176	Gold.
Totals	[2]9,663	$595,383	7,783	$11,297	$247,100		$71,761	

[1] Includes crushed rock, sand, gravel.
[2] Flasks of 76½ pounds, previous to June, 1904; of 75 pounds thence, through 1927; of 76 pounds since January, 1928.
[3] See under 'Unapportioned.'

MINERAL PRODUCTION OF YUBA COUNTY, 1880-1934

Year	Gold, value	Silver, value	Platinum		Miscellaneous stone[1], value	Miscellaneous and unapportioned		
			Ounces	Value		Amount	Value	Substance
1880	$943,860	$438						
1881	800,000	1,300						
1882	750,000							
1883	455,000							
1884	250,000							
1885	207,449							
1886	149,203							
1887	162,426							
1888	150,000							
1889	112,053	115						
1890	141,781							
1891	37,576							
1892	44,218							
1893	30,839							
1894	107,480							
1895	111,482							
1896	171,688							
1897	141,638							
1898	166,865							
1899	189,927	12						
1900	280,366	[2]2,041						
1901	188,908	[2]393						
1902	155,630	2						
1903	125,830	41						
1904	139,528					400 M. 375 tons	$3,000 750	Brick. Pottery clay.
1905	324,135	369				400 tons 2,000 gals.	80 800	Pottery clay. Mineral water.
1906	[3]	[3]				2,000 gals.	800	Mineral water.
1907	1,766,770	6,167				1,800 gals.	720	Mineral water.
1908	2,034,486	9,997			$5,750	1,000 M.	10,000	Brick.
1909	2,469,865	4,156			5,650	550 M. ————	6,600 568,564	Brick. Unapportioned, 1900-1909.
1910	3,204,273	5,372						
1911	2,997,072	5,299			9,318			
1912	2,753,408	6,198			15,526			
1913	2,491,505	7,571			8,063			
1914	2,800,713	5,295	74	$2,377	14,895			
1915	2,703,710	5,254	132	4,174	149,292			
1916	3,167,723	5,934	314	14,301	42,685	4,817 lbs. ————	1,185 6,000	Copper. Other minerals.
1917	3,667,673	6,591	149	8,869	28,863			
1918	3,767,933	13,796	189	12,930	43,338		6,888	Other minerals.
1919	4,195,732	12,276	[4]125	13,098	40,439			
1920	3,467,769	16,502	113	14,395	74,943		40	Other minerals.
1921	4,738,248	26,135	179	14,396	73,387		100	Other minerals.
1922	2,492,948	8,222	115	11,077	75,969		100	Other minerals.
1923	3,150,405	6,760	158	16,974	216,890		100	Other minerals.
1924	1,995,434	4,461	73	8,773	181,113		100	Other minerals.
1925	2,570,630	6,400	[3]		137,288		7,276	Natural gas, platinum.
1926	2,769,703	6,398	[3]		133,298		11,695	Natural gas, platinum.
1927	3,468,201	6,743			198,688		6,000	Other minerals.
1928	2,304,377	4,910	[3]		202,708		17,081	Other minerals.
1929	1,456,039	2,648	[3]		364,326		7,358	Other minerals.
1930	968,814	1,255			[3]		48,330	Other minerals.
1931	991,976	970	[3]		[3]		29,880	Platinum and miscellaneous stone.
1932	960,749	915			27,485			
1933	1,117,844	1,179			31,930		9	Unapportioned.
1934	1,911,960	2,938	[3]		31,099		5,049	Other minerals.
Totals	$78,723,842	$195,053	[3]1,621	$121,364	[3]$2,112,943		$738,505	

[1] Includes crushed rock, sand, gravel.
[2] Recalculated to 'commercial' from 'coining value' as originally published.
[3] See under 'Unapportioned.'
[4] Includes some palladium.

CHAPTER NINE

DIRECTORY OF PRODUCERS OF METALLIC AND NON-METALLIC MINERALS IN CALIFORNIA, 1934

Note—The producers of natural gas and petroleum will be found in the Quarterly Summary of Operations, California Oil Fields, for July, August and September, 1934 (Vol. 20, No. 1).

ASBESTOS

Operator	Product	Address	Location of mine
Napa County			
U. S. Asbestos Corp., Ltd.	Asbestine	Mills Tower, San Francisco	Steel Canyon

BARYTES

Operator	Address	Location of mine
Mariposa County		
National Pigments Co.	Russ Bldg., San Francisco	El Portal
Plumas County		
Synthetic Iron Color Co.	P.O. Box 1157, Richmond	Almanor
San Bernardino County		
L. P. Haney	Dragoon, Ariz.	Barstow
Santa Barbara County		
Girard V. B. Hale[a]	P.O. Box 632, Santa Barbara	La Brea
Tulare County		
Z. E. Page	129 Honolulu St., Lindsay	Camp Nelson

[a] Mined only, product not sold.

BENTONITE (FULLER'S EARTH)

Operator	Address	Location of mine
Inyo County		
California Desert Products Co.	58 Sutter St., San Francisco	Death Valley Junction
Commercial Mineral Co.	310 Irwin St., San Francisco	
Kern County		
Muroc Clay Co.	5525 Randolph St., Maywood	Muroc
San Benito County		
D. L. Stewart Property, A. P. Stewart, Lessee	1052 Vermont St., San Jose	Tres Pinos
San Bernardino County		
Walter Becker	P.O. Box 374, Red Mountain	Red Mountain
California Talc Co.	837 Jackson St., Los Angeles	Hector
John T. Thorndyke	1014½ N. Mariposa Ave., Los Angeles	Code Siding

BITUMINOUS ROCK

Operator	Address	Location of mine
Santa Barbara County		
Higgins Quarry, D. A. Sattler, lessee	856 Arguello Rd., Santa Barbara	Carpinteria
Santa Cruz County		
Calrock Asphalt Co.	525 Market St., San Francisco	Majors

BORATES

Operator	Address	Location of mine
Inyo County		
Pacific Alkali Co.	1209 Pacific Mutual Bldg., Los Angeles	Bartlett
Kern County		
Pacific Coast Borax Co.	1014 Central Bldg., Los Angeles	Kramer
San Bernardino County		
American Potash and Chemical Corp.	Trona	Trona
West End Chemical Co.	Syndicate Bldg., Oakland	Searles Lake

BROMINE

Operator	Address	Location of mine
Alameda County		
California Chemical Corp.	Box 8-A, Newark	Newark
San Diego County		
California Chemical Corp.	Box 8-A, Newark	San Diego

CALCIUM CHLORIDE

Operator	Address	Location of mine
San Bernardion County		
California Rock Salt Co.	2465 Hunter St., Los Angeles	Amboy
Saline Products, Inc.	2000 Santa Fe Ave., Los Angeles	Amboy

CARBON DIOXIDE GAS

Operator	Address	Location of wells
Imperial County		
Pacific-Imperial Dri-Ice, Inc., Carl M. Einhart, Pres.	Niland	Niland

CEMENT

Operator	Address	Location of mine
Calaveras County		
Calaveras Cement Co.	315 Montgomery St., San Francisco	San Andreas
Contra Costa County		
Henry Cowell Lime and Cement Co.	2 Market St., San Francisco	Cowell
Kern County		
Monolith Portland Cement Co.	Bartlett Bldg., Los Angeles	Monolith
Los Angeles County		
Blue Diamond Corp.	1650 S. Alameda St., Los Angeles	Los Angeles
Merced County		
Yosemite Portland Cement Co.	Merced	Merced
Riverside County		
Riverside Cement Co.	621 S. Hope St., Los Angeles	Riverside
San Bernardino County		
California Portland Cement Co.	601 W. Fifth St., Los Angeles	Colton
Southwestern Portland Cement Co.	503 Roosevelt Bldg., Los Angeles	Victorville
San Mateo County		
Pacific Portland Cement Co.	111 Sutter St., San Francisco	Redwood City
Santa Cruz County		
Santa Cruz Portland Cement Co.	Crocker Bldg., San Francisco	Davenport

CHROMITE

Operator	Remarks	Address	Location of mine
Placer County			
Daniel Sullivan	s	Towle	Dutch Flat
San Luis Obispo County			
Pick & Shovel Mine, P. A. H. Arata Est.	o	San Luis Obispo	Goldtree
Tuolumne County			
McCormick Chrome Mine, Robert McCormick	o	Jamestown	Jamestown

s. Shipped ore, mined prior to 1933. o. Both mined and shipped in 1933.

CLAY

(Including producers of crude clay and manufacturers of brick, tile, porcelain, etc.)

Operator	Remarks	Address	Location of plant or pit
Alameda County			
California Pottery Co.	a, c	Niles	Niles
N. Clark & Sons	a, b, c	116 Natomas St., San Francisco	Alameda
Livermore Fire Brick Work and California Brick Plant, W. S. Dickey Clay Mfg. Co.	a, b, e	116 New Montgomery St., San Francisco	Livermore and Fabrieo
Electrical Porcelain Works	a	2416 6th St., Berkeley	Berkeley
Interlocking Tile Co.	a, c	Niles	Niles
Kraftile Co., L. J. Layton	a	Niles	Niles
M & S Tile Co.	a, c	Decoto	Decoto
Remillard Brick Co., R. C. Giroux, Secy.	b	569 3d St., Oakland	Pleasanton
Technical Porcelain and China Ware Co.	a	420 Kains Ave., Albany, via Berkeley	Albany
Emeryville Porcelain Works, Westinghouse Elec. and Mfg. Co.	a	62d and Green Sts., Emeryville	Emeryville
Walrich Pottery	a	1285 Hearst Ave., Berkeley	Berkeley
Amador County			
M. J. Bacon	c	Ione	Carbondale
Ione Clay and Sand Pit, Cal. Mineral Products Co.	c, f	Kohl Bldg., San Francisco	Ione
Carlyle Clay Deposits, E. E. Tremain	c	Buena Vista, via R.F.D., Ione	Buena Vista
N. Clark & Sons	e	116 Natoma St., San Francisco	Ione

Clay Corp. of California	c	1267 Russ Bldg., San Francisco	Ione
Ione Clay Pit, W. S. Dickey Clay Mfg. Co.	c	116 New Montgomery St., San Francisco	Ione
Ione Fire Brick Co., J. T. Roberts, Mgr.	b	1267 Russ Bldg., San Francisco	Ione
Newman Clay Co., C. W. Forbes, lessee	c	Ione	Ione
Calaveras County			
California Pottery Co.	c	Niles	Valley Springs
Contra Costa County			
California Art Tile Corp.	a	Box 1116, Richmond	Richmond
Old Mission Tile Co.	a, c	1 20th St., Richmond	San Pablo
Port Costa Brick Works, C. G. Berg, Pres.	b	6th and Berry Sts., San Francisco	Port Costa
Standard Sanitary Mfg. Co., H. W. Creeger, Mgr.	a	Box W, Richmond	Richmond
Stockton Fire Brick Co.	b	Russ Bldg., San Francisco	Pittsburg
United Materials & Richmond Brick Co., Ltd.	a, b, c	P.O. Box 7, Richmond	Richmond
Fresno County			
Crayeroft Brick Co.	a, b	Griffith-McKenzie Bldg., Fresno	Fresno
Humboldt County			
D. J. Thompson Brick Co.	a, b, c	Box 16, Myrtle Ave., Eureka	Eureka
Inyo County			
California Desert Products Co.	c	58 Sutter St., San Francisco	Death Valley
Commercial Minerals Co.	c	310 Irwin St., San Francisco	----------
Kern County			
Bakersfield Rock & Gravel Co.	d	Box 395, St. A, Bakersfield	Bakersfield
Bakersfield Sandstone Brick Co., Jas. Curran, Mgr.	b	Bakersfield	Bakersfield
Muroc Clay Co.	c	5525 Randolph St., Maywood	Muroc
Mojave Rotary Mud Co., Ltd.	d	Box 174, Los Nietos	Muroc
Vitrefrax Co.	c	5050 Pacific Blvd., Los Angeles	Cantil
Los Angeles County			
Alhambra Kilns Inc., L. C. Merwin	a	Alhambra	Alhambra and Santa Monica
American Refractories Co.	a, b	3232 Alosta St., Los Angeles	Los Angeles
Angulo Tile Plant, R. F. Angulo & Sons	a, c	Reseda	Reseda
Art Tile Co.	a	2304 E. 52d St., Los Angeles	Vernon
Batchelder-Wilson Tile Co.	a	2633 Artesian St., Los Angeles	Los Angeles
J. A. Bauer Pottery Co.	a	415 W. Ave. 33, Los Angeles	Los Angeles
J. Booth	a	1775 Stanford, Santa Monica	Santa Monica

a. Clay products. b. Brick and hollow building tile. c. Crude clay. d. Oil-well drilling-mud. e. Filtering clay. f. Fire sand.

CLAY—Continued

(Including producers of crude clay and manufacturers of brick, tile, porcelain, etc.)

Operator	Remarks	Address	Location of plant or pit
Los Angeles County—Continued			
Builders Brick Co., Ltd.	b	177th and Western Aves., Moneta	Moneta
Calco Tile Mfg. Corp.	a	4240 Santa Ana, South Gate	South Gate
California Clay Prod. Co., Ltd.	a, c	Box 568, Whittier	Whittier
Claycroft Potteries, Fred H. Robertson	a	3101 San Fernando Blvd., Los Angeles	Los Angeles
Consolidated Brick & Tile Co., Ltd.	a, b, c	2600 Colorado Ave., Santa Monica	Los Angeles, Long Beach, Santa Monica
Davidson Brick Co.	b, c	4701 Floral Dr., Los Angeles	Los Angeles
Eljer California Co.	a	4100 Alameda, Los Angeles	Arcadia
Emsco Refractories Co.	a, b	5601 S. Boyle Ave., Vernon	Vernon
Tropico, L. A. & S. M. Plants, Gladding, McBean & Co.	a, b, c	660 Market St., San Francisco	Tropico, Los Angeles, Santa Monica, Hermosa Beach and Vernon
Higgins Brick & Tile Works, James R. Higgins	a, b, c	P.O. Box 1225, Moneta	Moneta
Italian Terra Cotta Co.	a	1149 Mission Rd., Los Angeles	Los Angeles
K & K Brick Co., Geo. H. Snyder, Pres.	b	606 Union Bank Bldg., Los Angeles	Bishop Canyon
Long Beach Brick Co., Inc., H. A. Havner, Mgr.	b	422 E. Broadway, Long Beach	Long Beach
Markoff Mosaic Tile Corp.	a	1107 E. Redondo Blvd., Inglewood	Inglewood
Myers Pottery Co	a	2318 E. 52d St., Los Angeles	Los Angeles
Pacific Clay Products	a, b, c	650 Chamber of Commerce Bldg., Los Angeles	Los Angeles and Los Nietos
Pomona Brick Co., Wm McMullen, Mgr.	b	Pomona	Pomona
Pomona Tile Mfg. Co.	a	Pomona	Pomona
San Vallee Tile Kilns, R. F. Stubver, Mgr.	a, c	6601 Wilbur, Reseda	Reseda
Santa Catalina Island Co., Wm. Wrigley, Jr.	a, b, c	Avalon	Santa Catalina Island
St. Louis Fire Brick and Clay, Joseph Mesmer	a, b	3050 E. Slauson St., Los Angeles	Los Angeles
Simons Brick Co., Walter R. Simons	a, b, c	1195 S. Boyle Ave., Los Angeles	Los Angeles
Standard Brick Co.	b	1760 S. Sato St., Los Angeles	Los Angeles
Star Brick Co.	b	Moneta	Moneta
Tillotson Clay Products	a, b	3363 Fruitland Rd., Vernon	Vernon
Tudor Potteries	a	2406 E. 58th St., Los Angeles	Los Angeles
Vernon Potteries	a	2300 E. 52d St., Los Angeles	Vernon
Vitrefrax Corp.	a, b	5100 Pacific Ave., Los Angeles	Vernon
Marin County			
McNair Brick Co.	a, b	McNear Point, San Rafael	McNear

Monterey County			
Castroville Clay Products Co.	a, c	Castroville	Castroville
Orange County			
Gladding, McBean & Co.	c	660 Market St., San Francisco	
La Bolsa Tile Co., A. N. Griffith	a, b, c	R.F.D. 1, Box 174, Huntington Beach	Smeltzer
Mission Clay Products Co.	a, b, c	Olive	Olive
C. O. Nawton	c	823 Hickory St., Santa Ana	Capistrano
Placer County			
Clay Corp. of Cal.	c	1267 Russ Bldg., San Francisco	Lincoln
Gladding, McBean & Co.	a, b, c	5th floor, 660 Market St., San Francisco	Lincoln
Lincoln Clay Products Co., M. J. Dillman, Mgr.	c	Lincoln	Lincoln
Riverside County			
Alberhill Coal and Clay Co.	c	2406 E. 58th St., Los Angeles	Alberhill
C. R. Freeman	c	Courthouse, Riverside	Corona
Gladding, McBean & Co.	a, b, c	660 Market St., San Francisco	Alberhill
Los Angeles Brick Co.	a, b, c	1078 Mission Rd., Los Angeles	Alberhill
Geo. H. Morton	c	Elsinore	Elsinore
Pacific Clay Products	c	650 Chamber of Commerce Bldg., Los Angeles	Corona
Temescal Clay Co.	c	5601 S. Boyle Ave., Los Angeles	Temescal
Sacramento County			
Cannon & Co.	a, b, c	Box 802, Sacramento	Ben Ali
H. C. Muddox, Jessie E. Muddox, owner	a, b	30th and L Sts., Sacramento	Sacramento
Panama Pottery Co.	a	Box 1478, R.F.D. No. 4, 24th St. Rd., Sacramento	Sacramento
Sacramento Brick Co.	b	1400 Front St., Sacramento	Sacramento
Valley Brick Co.	b	P.O. Box 1180, Sacramento	Sacramento
San Benito County			
D. L. Stewart Property, A. P. Stewart, lessee	e	1052 Vermont, San Jose	Tres Pinos
San Bernardino County			
Walter Becker	e	P.O. Box 374, Red Mountain	Searles Station
California Talc Co.	e	837 Jackson St., Los Angeles	Hector
Hancock Brick Yard, C. P. Hancock & Son	b	4330 Lemon St., Riverside	Highgrove
Hart Clay Deposit, W. K. S. Keoch, lessee	c	2022 Thayer Ave., Los Angeles	Goffs
Kennedy Clay Pit, John Kennedy	c	1306¾ Warren Ave., Los Angeles	Daggett
Standard Sanitary Mfg. Co., Pacific Mines, P. R. Jones, Mgr.	c	Campo	Hart
Velvet-White Mines, E. J. Driscoll	c	4721 Second Ave., Los Angeles	Oro Grande

a. Clay products. b. Brick and hollow building tile. c. Crude clay. e. Filtering clay.

CLAY—Continued

(Including producers of crude clay and manufacturers of brick, tile, porcelain, etc.)

Operator	Remarks	Address	Location of plant or pit
San Diego County			
Pacific Clay Products Co.	c	650 Chamber of Commerce Bldg., Los Angeles	Farr Station
Union Brick Co., J. W. Rice	b	3565 3d St., North San Diego	Rose Canyon
Vitrified Products Corp.	a, b, c	2841 Jefferson St., North San Diego	North San Diego
San Joaquin County			
San Joaquin Brick Co., J. F. Stein, Secy.	b	33 S. El Dorado St., Stockton	Stockton
Stockton Brick & Tile Co.	b	McKinley Ave., Stockton	Stockton
San Luis Obispo County			
San Luis Brick Works, Faulstich Bros.	a, b	San Luis Obispo	San Luis Obispo
San Mateo County			
Richmond Potteries, Inc.	a	Box 187, South San Francisco	South San Francisco
Santa Barbara County			
Gamble Brick Co.	b	Santa Maria	Santa Maria
Santa Clara County			
Coyote Creek Clay Beds, L. R. Lenfest	c	1195 E. Santa Clara St., San Jose	San Jose
Garden City Pottery, N. J. Mahone	a	560 N. 6th St., San Jose	San Jose
Gladding Bros. Mfg. Co.	a, b, c	South 3d and Keyes Sts., San Jose	San Jose
Handcraft Tile Co., L. W. Austin et al	a	R. F. D. 2, Box 121A, San Jose	San Jose
Remillard Brick Co.	b	569 3d St., Oakland	San Jose
San Jose Brick Co.	b	P.O. Box 274, San Jose	San Jose
S. & S. Tile Co.	a	1881 S. 1st St., San Jose	San Jose
Stanislaus County			
Coopertown Clay Deposit, J. H. Hornsby	c	651 Cumberland St., Pittsburg	Coopertown
V. J. Winkler	c	Knights Ferry	Knights Ferry
Tulare County			
San Joaquin Materials Co.	b	744 G St., Fresno	Exeter
Ventura County			
Peoples Lumber Co., C. E. Bonestel, Mgr.	a, b, c	708 E. Meta St., Ventura	Ventura
Dent Clay Pit, Shell Oil Co.	d	Shell Bldg., San Francisco	Ventura

a. Clay products. b. Brick and hollow building tile. c. Crude clay. d. Oil-well drilling-mud.

COAL

Operator	Address	Location of mine
Amador County		
Buena Vista Coal Mining Co., J. J. Morras, Supt.	Ione, c/o R.F.D.	Buena Vista
Monterey County		
Monterey Coal Corp.	111 Sutter St., San Francisco	Stone Canyon
Santa Cruz County		
Look Coal Mine, C. R. Look	44 Clay St., Santa Cruz	Corralitos
Trinity County		
Big Bar Coal Mining Co., E. O. E. Klipphahn, Secy.	R.F.D. 1, Box 92A, Grass Valley	Big Bar

COPPER

Principal Copper Producers in California in 1934

Mine	Operator	Address	Location of mine
Inyo County			
Estelle & Cerro Gordo	Estelle Mines Corp.	972 S. 4th St., Los Angeles	Keeler
Nevada County			
Empire, North Star, Murchie	Empire-Star Mines Co., Ltd.	Rm. 1507, 14 Wall St., New York, N. Y.	Grass Valley
Empress	Republic Gold Mining Corp.	Box 914, Grass Valley	Grass Valley
San Juan	Bradley Mining Co.	Crocker Bldg., San Francisco	North San Juan
Shasta County			
Hornet	Mountain Copper Co., Ltd.	Balfour Bldg., San Francisco	Matheson

DIATOMITE (DIATOMACEOUS EARTH)

Operator	Address	Location of quarry or mine
Fresno County		
Mineral Products Mfg. Co., T. H. Elliott and L. J. Allen	3464 Ventura St., Fresno	Mendota
A. P. Shepard	3101 Mariposa St., Fresno	Mendota
Los Angeles County		
The Dicalite Co.	756 S. Broadway, Los Angeles	San Pedro
Monterey County		
Pacatome, Ltd.	Bradley	Bradley
Santa Barbara County		
Johns-Manville Products Corp.	Lompoc	Lompoc
National Silica Products Co., C. E. Miller	1201 Bryant St., Palo Alto	Lompoc

DOLOMITE

Operator	Address	Location of quarry
Inyo County		
Dolomite Products Co.	103 N. Kingsley Dr., Los Angeles	Lone Pine
Inyo Marble Co.	361 N. Avenue 22, Los Angeles	Lone Pine
Monterey County		
Pacific Coast Steel Corp., Sterling Ranch Quarry	20th and Illinois Sts., San Francisco	Natividad

FELDSPAR

Operator	Address	Location of mine
San Diego County		
Standard Sanitary Mfg. Co., P. R. Jones, Mgr.	Campo	Campo

FLUORSPAR

Operator	Address	Location of mine
San Bernardino County		
C. J. Whitlock	987 25th St., San Bernardino	Afton

GEMS

Operator	Variety	Address	Location of mine
Counties, various			
Felker Research Laboratory, Max N. Felker	Rose quartz, blue-agate, mottled jasper, touchstone	3321 Emerald St., Torrance	
Fresno County			
C. M. Carter	Topaz	Youngs P.O., El Dorado Co.	Friant
Riverside County			
Carniger Mine, H. F. Heather	Iceland-spar	236 S. Oak Knoll Ave., Pasadena	Indio
Tulare County			
Janoiko Bros.	Onyx, vesuvianite	R.F.D. 1, Box 688, Porterville	Porterville

GOLD

Principal Gold Producers in California out of a Total of 2,651 Placer Operators and Lode Mines in 1934

Mine	Type of mine	Operator	Address	Location of mine
Amador County				
Amador Star	a	West America Cons. Gold Mines, Inc.	P.O. Box 106, Plymouth	Plymouth
Argonaut	a	Argonaut Mining Co., Ltd.	Jackson	Jackson
Argonaut Tailing Dump	c	Hill & Hambric	Jackson	Jackson
Buena Vista	g	Alvah G. Ekel	Ione	Camanche
Central Eureka and Old Eureka	a	Central Eureka Mining Co.	111 Sutter St., San Francisco	Sutter Creek
Central Eureka Tailings Dump	e	Central Tailings Co.	564 Market St., San Francisco	Sutter Creek
Kennedy	a	Kennedy Mining and Milling Co.	519 California St., San Francisco	Martell
Lancha Plana	e	Lancha Plana Gold Dredging Co.	Camanche	Camanche
Levezzo (Petersen)	a	W. F. Petersen	Jackson	Jackson
Pioneer	a	Pioneer Lucky Strike Mining Co.	Pine Grove	Pine Grove
Plymouth (Pacific)	c	Plymouth Con. Mines Co., Ltd., Elwood, Ore.	Plymouth	Plymouth
Valparaiso	a	Valparaiso Mining Co.	Box 414, Jackson	Jackson
Butte County				
Cohan-Gooday	f	Genii Con. Mines Co., Ltd.	Holbrook Bldg., San Francisco	Magalia
Jack Ranch	a	S. M. Allen	R.F.D. 2, Box, 105, Oroville	Oroville
New Era	f	J. A. Gaumer	Paradise	Paradise
Surcease	a	Hoefling Bros., Inc.	R.F.D. 4, Box 214, Chico	Yankee Hill
Thurmon Hill	e	Oroville Gold Dredging Co.	Box 86, Oroville	Oroville
Wyandotte Creek	b	H. F. England	Box 3, Oroville	Oroville
Calaveras County				
Boston	a	Boston, Mokelumne Mining Co., F. C. Moore, Supt.	Mokelumne Hill	Mokelumne Hill
Calaveras Central	f	Calaveras Central Gold Mining Co., Ltd.	Hobart Bldg., San Francisco	Angels Camp
Carson Hill	a	Carson Hill Gold Mine Corp.	Sonora	Melons
Easy Bird	a	Lucky Joe Gold Mining Co.	Box 292, Jackson	Mokelumne Hill
Gold Gravel	b	Gold Gravel Product Inc.	Wallace	Wallace
Golden River	f	Golden River Mining Co.	Angels Camp	Angels Camp
Lloyd Placer	f	Charles W. Nielson	San Andreas	San Andreas
Osborn	a	Belmont Osborn Gold Mine	381 Bush St., San Francisco	Altaville
Royal	a	F. S. Tower	Milton	Milton
South Gulch	b	E. L. Lilly	1844 Carmel Ave., Stockton	Jenny Lind
Spring Valley	b	Spring Valley Mine Co.	R.F.D. 3, Box 133, Stockton	Spring Valley
Vallecito-Western	f	Tonapah Belmont Dev. Co., (Lessee)	Angels Camp	Angels Camp

El Dorado County				
Alhambra	a	Jensen and Schneider	R.F.D. 7, Box 2466, Sacramento	Kelsey
Beebe	a	The Beebe Gold Mining Co.	Crocker Bldg., San Francisco	Georgetown
Black Oak	a	Edwin W. Wilson	Garden Valley	Garden Valley
Briercliffe	a	Briercliffe Mines Ltd., R. O. Morrow	Box 156, Plymouth	Plymouth
Crystal	a	Dennis C. Childers	4335 Edgewood Ave., Oakland	
Gold Bug, Hickman and Blue Rock	e	Canyon Creek Dredge, J. E. Groudgacer, Trustee	Russ Bldg., San Francisco	Georgetown
Gold Reserve	a	George W. Peltier	c/o Bank of America, 8th and J St., Sacramento	Placerville
Kelsey	a	Kelsey Mining Co., Inc., Egbert T. Willard	519 California St., San Francisco	Kelsey
Middle End	a	Melton Gold Mines, Ltd.	Placerville	Grizzly Flat
Montezuma	a	Montezuma-Apex Mining Co.	Box M., Placerville	El Dorado
Slate Mountain	a	R. W. Brooke	Box 222, Placerville	Georgetown
Slinger	a	Middle Ford Gold Mining Co.	Box M, Auburn	Greenwood
Fresno County				
Grant Service Gravel Pit	b	Grant Service Rock Co.	523 Patterson Bldg., Fresno	Friant
Humboldt County				
Pearch	g	P. L. Young	Orleans	Orleans
Inyo County				
Cardinal	a	Cardinal Gold Mining Co.	Bishop	Bishop
Cleveland	a	Lange Bros.	Big Pine	Big Pine
Paleto	a	Charles H. Olds, Jr.	Bishop	Bishop
Reward	a	Inyo Mines, Inc.	Yermo	Yermo
Kern County				
Buckboard	a	E. R. Ferry	308 E. Lomita., Glendale	Randsburg
Big Blue	a	Big Blue Mining Co.	459 Holbrook Bldg., San Francisco	Kernville
Big Dyke	a	Anglo American Mining Corp.	1005 Mills Bldg., San Francisco	Randsburg
Butte Lode	a	Butte Lode Mining Co.	1231 Roosevelt Bldg., Los Angeles	Randsburg
Drunkards Dream	a	Drunkards Dream Mine Co., J. C. Walser	409 18th St., Bakersfield	Caliente
Elephant-Eagle	a	Elephant-Eagle Mines Co.	Mojave	Mojave
Farrbright	a	Bright and Burton	Rosamond	Rosamond
King Solomon	a	International Mining & Milling Co.	183 N. Martel Ave., Los Angeles	Johannesburg
King Solomon-Consolidated	c	Louis Warnkins et al	Randsburg	Johannesburg
Minnehaha	a	E. B. Maginnis et al	P.O. Box 228, Randsburg	Randsburg
Silver Queen	a	Golden Queen Mining Co.	Pacific Mutual Bldg., Los Angeles	Mojave
Soledad	a	W. Campbell et al	Mojave	Mojave
Standard	a	C. A. Heyen and O. J. Bruce	Mojave	Mojave
Susanna	a	Rogers & Gentry	Fairmont	Fairmont
Tropico	a	Burton Bros., Inc., Lessees Tropico Mine	Rosamond	Rosamond
Yellow Aster	a	Anglo American Mining Co.	1005 Mills Bldg., San Francisco	Randsburg
Yellow Aster Dump	e	Randsburg-Aster Gold Mining Co.	Johannesburg	Randsburg

a. Lode mine. b. Placer mine. c. Tailing dump. e. Dredge. f. Drift mine. g. Hydraulic mining.

GOLD—Continued

Principal Gold Producers in California out of a Total of 2,651 Placer Operators and Lode Mines in 1934

Mine	Type of mine	Operator	Address	Location of mine
Lassen County				
Juniper	a	George J. Harper	Adin	Adin
Los Angeles County				
Big Horn	a	Big Horn Mining Co.	Valero	Valero
New York	a	Governor Mining Co., C. H. McWilliams	725 S. Figueroa St., Los Angeles	Frazier Park
Mariposa Cointy				
Buffalo	a	Gabriel Mining Co.	Midpines	Midpines
Diltz	a	E. R. Baker	Mariposa	Whitlock
Doss	a	The Doss Mining Co.	Hornitos	Hornitos
Original (Clearing House)	a	Original Mining and Milling Co.	Merced	Incline
Pine Tree & Josephine	a	Pacific Mining Co.	1022 Crocker Bldg., San Francisco	Bagby
Pyramid	a	Pyramid Leasing Co.	575 W. San Carlos St., San Jose	Hornitos
Ruth Pierce	c	Tennessee Mining Co.	Hornitos	Hornitos
Texas Hill	a	Texas Hill Mining Co., Frederick R. Stewart	125 Market St., San Francisco	Coulterville
Virginia	a	Virginia Mining Co.	Coulterville	Coulterville
Merced County				
Merced Unit	e	Yuba Consolidated Goldfields	351 California St., San Francisco	Snelling
Snelling Dredge	e	Snelling Dredging Co.	Snelling	Snelling
Mono County				
Long Chance and Vanclmart	a	H. A. Van Loon	Bishop	Hammel
Standard	a	J. S. Cain	Bodie	Bodie
Nevada County				
Alta Hill	b	Cooley Butler	745 Rowan Bldg., Los Angeles	Grass Valley
Ancho Erie	a	Ancho Erie Mining Co.	Granitesville	Granitesville
Canada Hill Hussey and Queen Lil	a	West Mines Corp.	Box 831, Nevada City	Nevada City
Davis Flat	b	Davis Placer Mining Co., B. Moscstelli	Washington	Washington
Empire, North Star, Murchie	a	Empire-Star Mines Co., Ltd.	Rm. 1507, 14 Wall St., New York, N. Y.	Grass Valley
Empress	a	Republic Gold Mining Corp.	P.O. Box 914, Grass Valley	Grass Valley
Golden Center and Schroeder	a	Cooley Butler	Rowan Bldg., Los Angeles	Grass Valley
Hoge	a	Great Northern Gold Mines	Nevada City	Nevada City

Idaho-Maryland	a	Idaho-Maryland Mines Co.	Russ Bldg., San Francisco	Grass Valley
Lava Cap	a	Lava Cap Gold Mining Corp.	Box 780, Nevada City	Nevada City
Omega	g	Omega Development Co.	e/o John L. McNab, Crocker First National Bank Bldg., San Francisco	Washington
Queen Lil	a	C. I. Rockefellow	Nevada City	Nevada City
San Juan	a	Bradley Mining Co.	Crocker Bldg., San Francisco	North San Juan
Spanish	a	Spanish Mining Co.	Crocker Bldg., San Francisco	Washington
You Bet	g	You Bet Mining Co.	Grass Valley	You Bet
Placer County				
Alabama	a	Alabama Calif. Gold Mines Co.	P.O. Box 155, Auburn	Penryn
American Bar	a	Industrial Eng. & Equipment Corp.	Michigan Bluff	Michigan Bluff
Auburn-Chicago	a	Auburn-Chicago Mining Co.	3443 Wilshire Blvd., Los Angeles	Penryn
Auburn-Echoless	a	W. S. Floyd	Auburn	Auburn
Crocker Ranch	b	E. B. Skeels	Auburn	Auburn
Dairy Farm	a	Dairy Farm Gold Mine Corp.	Box 326, Lincoln	Lincoln
Gleason	b	Goodman Mining Co.	Iowa Hill	Iowa Hill
Glenn	f	Capital Glenn Mining Co.	Foresthill	Foresthill
Hone-ticket	b	Black Bear Consolidated Mining Co.	Michigan Bluff	Michigan Bluff
Liberty Hill	a	Liberty Hill Gold Mine, Ltd.	417 South Hill St., Los Angeles	Dutch Flat
Oro Bell	c	Oro Bell Dredging Co.	Sacramento	Gold Run
Paragon	g	Rosenberger & Gillette	Foresthill	Foresthill
Rawhide	a	Canyon Mining Corp.	144 Kearney St., San Francisco	Towle
Victory	a	J. E. Johnson & H. E. Loufek	233 E. Plaza St., Reno, Nev.	Iowa Hill
Plumas County				
Bunker Hill	f	Sierra Nevada Mining Co.	La Porte	La Porte
Plumas Eureka Placer	b	Coats & Radil	810 Balfour Bldg., San Francisco	Johnsonville
Sacramento County				
Capital	e	Capital Dredging Co.	Balfour Bldg., San Francisco	Folsom
McDerby, Russi Ranch	e	Gold Hill Dredging Co.	311 California St., San Francisco	Folsom
Mississippi Bar	b	Larson Bros.	5220 21st Ave., Sacramento	Folsom
Natomas	e	Natomas Co.	Forum Bldg., Sacramento	Natomas
San Bernardino County				
Atolia Rand	b	Atolia Rand Placers, Inc.	215 W. 5th St., Los Angeles	Atolia
Branch	a	Elmer Branch et al	Box 13, Barstow	Oro Grande
Brookland	a	Butler & Roper	Mecca	Mecca
Coyote	a	Randsburg Silver Mines Corp., F. H. Lanley	702 Continental Bldg., Los Angeles	Red Mountain
Kelly	a	Kelly Gold & Silver Mines, Inc., Frank W. Roper	Hallongsworth Bldg., Los Angeles	Red Mountain

a. Lode mine. b. Placer mine. c. Tailing dump. c. Dredge. f. Drift mine. g. Hydraulic mining.

GOLD—Continued

Principal Gold Producers in California out of a Total of 2,651 Placer Operators and Lode Mines in 1934.

Mine	Type of mine	Operator	Address	Location of mine
Markesun	a	Thomas M. Hall	P.O. Box 231, Ludlow	Ludlow
Old Peter	a	Yim & Wheelock	Box B, Ludlow	Ludlow
Vanderbuilt (Sidewinder)	a	Atascadero Mining Co.	Atascadero	Ivanpah
Vulcan	a	John M. Funk et al	Amboy	Amboy
----------	a	C. O. Nordine	Trona	Trona
San Diego County				
North Hubbard	a	Campbell & Baclay	4595 S. Orange Dr., Los Angeles	Julian
Shasta County				
American	a	Abacada Mining Corp.	French Gulch	French Gulch
Iron Mountain	a	The Mountain Copper Co., Ltd.	Balfour Bldg., San Francisco	Matheson
Milkmaid	a	J. H. Scott Co.	465 California St., San Francisco	French Gulch
Yankee Jack-Boswell	a	Richstrike Gold Mines, Ltd.	Redding	Redding
Sierra County				
Golden Bear	g	Golden Bear Mines, Ltd., H. F. Thomas, Sec.	47 Second St., San Francisco	Alleghany
Kanaka Creek	a	Lloyd V. Smith	Alleghany	Alleghany
Kenton	a	George E. Gamble	1431 Waverly St., Palo Alto	Alleghany
Oriental	a	Gold Star Mines, Inc.	Alleghany	Alleghany
Oriflame	a	John L. Connel	Alleghany	Alleghany
Original 16 to 1 and Tightner	a	Original 16 to 1 Mines, Inc.	Russ Bldg., San Francisco	Alleghany
Ruby	g	Carl Vivian, Lessee,	Alleghany	Alleghany
Scotia	a	E. L. Crafts	Grass Valley	Alleghany
Sierra Alaska	a	E. K. Askeraft, Lessee	Towle	Pike
Sierra Butte	a	Hayes Co., E. A. Hayes	Mercury Herald Bldg., San Jose	Sierra City
Siskiyou County				
Cal Ore	e	Cal Ore Dredging Co.	Monadnock Bldg., San Francisco	Yreka
King Solomon	a	King Solomon Mines Co.	Crocker Bldg., San Francisco	Black Bear
Mt. Vernon	a	K. K. Ash	Yreka	Yreka
New York	a	California-New York Mining Co., Byrne & Wayne	Fort Jones	Fort Jones

Old Turk	a	Banks & Maginnis, Inc.	Fort Jones	Fort Jones
Oro Grande	a	Oro Grande Mining Co.	Callahan	Callahan
Reeves	g	Minnie A. Reeves	126 Laguna St., San Francisco	Happy Camp
Stanislaus County				
La Grange	e	La Grange Gold Dredging Co.	Mills Bldg., San Francisco	La Grange
Stines Property	b	La Grange Gold Mines, Inc., Alfred B. Swinnerton	225 Bush St., San Francisco	La Grange
Trinity County				
Brown Bear	a	Brown Bear Mines Corp.	Lewiston	Lewiston
Canyon Creek	g	Canyon Creek Placers, Inc.	Dedrick	Dedrick
Enterprise	a	Chickson Oil Co., Ltd.	Chapman Bldg., Fullerton	Helena
Gold Bar	e	Gold Bar Dredging Corp.	Box 103, Lewiston	Lewiston
Osborn Hill	g	M. R. K. Mining Co.	Helena	Helena
Red Hill	g	Northern California Mines Co.	510 Standard Oil Bldg., San Francisco	Junction City
Senger Placer	g	Senger Placer Co., Moon Lee	Weaverville	Weaverville
Trinity	e	Trinity Dredging Co.	Lewiston	Lewiston
Tuolumne County				
Big Dyke	a	F. B. Kallberg	Columbia	Columbia
Columbus	a	Columbus Gold Mining Co.	1 Montgomery St., San Francisco	Tuolumne
Lizard	d	John L. Witney	Jamestown	Jamestown
Newmeyer	a	F. E. Bernard	Sonora	Sonora
Senator	a	Senator Mining Co.	Chinese Camp	Chinese Camp
Soulsby Belle	a	Soulsby Belle Mining Camp	Soulsbyville	Soulsbyville
Yuba County				
Blue Point	f	Gold Exploration Co.	Smartsville	Smartsville
Golden Hope (Horse Shoe)	a	Wallberg Mining Corp.	Challenge	Challenge
Stanfield Hill	e	Sierra Gold Dredging Co.	Russ Bldg., San Francisco	Oregon House
Yuba	e	Yuba Consolidated Gold Fields	351 California St., San Francisco	Hammonton

a. Lode mine. b. Placer mine. d. Pocket. e. Dredge. f. Drift mine. g. Hydraulic mining.

GRANITE

Operator	Product	Address	Location of quarry
Fresno County			
Academy Granite	a	Clovis	Clovis
Superior Granite Co., Inc.	a	Clovis	Academy
Lassen County			
A. D. Greig, Greig Quarry	a	Susanville	Susanville
Madera County			
Kingsland Granite Co.	a	Rowell Bldg., Fresno	Bates Station
Mariposa County			
Yosemite National Park	a	Yosemite	Yosemite Park
Nevada County			
Netz Granite Quarry, Ludwig Netz	a	Nevada City	Nevada City
Placer County			
Victor Wickman	a	Roeklin	Roeklin
Plumas County			
Paul Sonognini	a	Chilcoot	Chilcoot
Sacramento County			
Folsom State Prison	a	Represa	Represa
San Diego County			
Crystal Black Quarry, John Stridsburg	a	Escondido	Spooks Canyon
Matson & Deering, Meyers Quarry	a	Lakeside	Lakeside
Magee Quarry, Robert J. Magee	a	Pala	Pala
McGilvray-Raymond Corp., Lakeside Quarry	a	678 S. Anderson St., Los Angeles	Lakeside
San Luis Obispo County			
California Cut Stone & Granite Co.	b	South San Francisco	Santa Maria
Sonoma County			
L. R. De Chesne	c	Glen Ellen	Glen Ellen
Ernest Laurent	b, c	Kenwood	Kenwood
Ventura County			
G. W. Dryden	c	Fillmore	Grimes Canyon

a. Granite used in building and monumental stone. b. Tuff used as building stone. c. Volcanic rock used as flagstone.

GYPSUM

Operator	Address	Location of quarry
Fresno County		
Green & Collins	Ceres	South Dos Palos
Paoli Gypsum Mine, A. P. Shepard, Mgr.	3101 Mariposa St., Fresno	Mendota
Imperial County		
Imperial Gypsum Quarry, Pac. Portland Cement	111 Sutter St., San Francisco	Plaster City
Mereed County		
Dos Palos Gypsum Co., O. L. Divens and A. A. Conrowe	Dos Palos	Dos Palos
Riverside County		
E. R. Nonhoff	1116 Ramona St., Corona	Corona
U. S. Gypsum Co.	507 Architects Bldg., Los Angeles	Midland

IODINE

Operator	Address	Mine
Los Angeles County		
General Salt Co.	P.O. Box 277, Long Beach	Long Beach
Deepwater Chemical Co., Ltd.	Box 762, Compton	Compton
I. O. Dow Chemical Co.	310 Santiago Ave., Long Beach	Long Beach

IRON

Mine	Operator	Address	Location of mine
San Bernardino County			
Cave Canyon	A. S. Vinell Co.	969 Amelia Ave., Los Angeles	Baxter
Santa Cruz County			
Rob Roy Beach	MacDonald & Kahn Co., Ltd.	Financial Center Bldg., San Francisco	Rob Roy

LEAD

Principal Lead Producers in California in 1934

Mine	Operator	Address	Location of mine
Inyo County			
Carbonate	J. P. Madison	490 Post St., San Francisco	Shoshone
Estelle & Cerro Gordo	Estelle Mines Corp.	972 S. 4th St., Los Angeles	Keeler
Santa Rosa	Santa Rosa Mining & Development Co., Inc.	Keeler	Keeler
Nevada County			
Empire, North Star, Murchie	Empire-Star Mines Co., Ltd.	Rm. 1507, 14 Wall St., New York, N. Y.	Grass Valley
Empress	Republic Gold Mining Corp.	Box 914, Grass Valley	Grass Valley
San Bernardino County			
H. C. Ryerson	H. C. Ryerson	Dagget	Dagget
----------	R. P. Merritt	Orlando	Orlando
----------	C. O. Nordine	Trona	Trona

Operator	Product	Address	Location of quarry
Alameda County			
California Chemical Corp.	a, d	Box 8-A, Newark	Newark
El Dorado County			
Auburn Chemical Lime Co., Ltd.	a, b	Auburn	Newcastle
Diamond Springs Lime Co.	a, b	Diamond Springs	Diamond Springs
El Dorado Limestone Co., J. H. Bell, Mgr.	b, c	Shingle Springs	Shingle Springs
Pac. Portland Cement Co., Cons.	b	111 Sutter St., San Francisco	Auburn
Fresno County			
Coral Reef Lime Corp., B. F. Mason, Mgr.	c, e	Dinuba	Reedley
Drake Lime Co., H. E. Drake	c, e	R.F.D. 2, Box 821, Sanger	Sanger
San Bernardino County			
Cal. Portland Cement Co.	a	1228 Pac. Mutual Bldg., Los Angeles	Colton
Chubbuck Lime Co., Chas. I. Chubbuck	a, b, c	5000 Worth St., Los Angeles	Chubbuck
Victorville Lime Rock Co.	b	2149 Bay St., Los Angeles	Victorville
San Mateo County			
Pacific Portland Cement Co.	c, d	111 Sutter St., San Francisco	San Mateo
Santa Clara County			
Bay Shell Co.	c, d	503 Market St., San Francisco	Alviso
L. H. Beek	c, d	P.O. Box 113, Colma	Alviso
Bernal California Marl Co., Pedro Bernal	c, e	Edenvale, c/o San Jose	Edenvale
W. B. Ortley Shell Co.	d	Alviso	Alviso
Santa Clara Holding Co., Ltd.	a	319 Matson Bldg., San Francisco	Simla
Santa Cruz County			
Henry Cowell Lime and Cement Co., W. H. George, Mgr.	a, b	2 Market St., San Francisco	Santa Cruz
Holmes Lime & Cement Co.	a	Division and De Haro Sts., San Francisco	Felton
Pacific Limestone Prod. Co.	b	Spring St., Santa Cruz	Santa Cruz
Tuolumne County			
McLean Quarry, W. S. McLean	a	419 Bayshore Blvd., San Francisco	McLean Spur
U. S. Lime Products Corp.	a, b	58 Sutter St., San Francisco	Sonora
Ventura County			
Tapo Alta Lime & Fertilizer Co., Mrs. M. L. Franklin, Secy.	c, e	412 W. 6th St., Los Angeles	Santa Susana

a. Producer of burnt lime. b. Producer of limestone. c. Agricultural lime. d. Shells. e. Marl.

MAGNESITE

Operator	Address	Location of mine
Santa Clara County		
Sierra Magnesite Co., lessee, Western Magnesite Mine	Box 8A, Newark	Red Mountain
Stanislaus County		
Sierra Magnesite Co., Bald Eagle Mine	Box 8A, Newark	Gustine

MAGNESIUM SALTS

Operator	Product	Address	Location of plant
San Diego County			
California Chemical Corp.	Chloride	Box 8A, Newark	San Diego
San Mateo County			
Marine Chemical Co., R. E. Clarke	Carbonate	South San Francisco	South San Francisco
Plant Rubber & Asbestos Works	Carbonate	537 Brannan St., San Francisco	Redwood City

MANGANESE ORE

Operator	Address	Location of mine
Lake County		
Bradley & Ekstrom	320 Market St., San Francisco	Middletown
Riverside County		
Bradley & Ekstrom	320 Market St., San Francisco	Cox
San Bernardino County		
Bradley & Ekstrom	320 Market St., San Francisco	Hector

MARBLE (Including Onyx and Travertine)

Operator	Product	Address	Location of quarry
Santa Barbara County			
G. Antolini	b	111 E. Gutierrez St., Santa Barbara	Tajiguas
Solano County			
Tolenas Springs Onyx, L. Cardini	c	121 14th St., San Francisco	Tolenas Springs
Tuolumne County			
The Columbia Marble Co., R. H. Van Norden, Secy	a	413 Rialto Bldg., San Francisco	Columbia

a. Marble. b. Limestone flagstone. c. Onyx and travertine.

Operator	Address	Location of spring
Butte County		
Feather River Canyon Spring Water Co., R. E. Chappell	2215 L St., Sacramento	Pulga
Richardson Springs, Lee Richardson, Mgr.	Chico	Chico
Calaveras County		
Mok-Hill Mineral Springs, L. Walkmeister	Sutter Creek	Sutter Creek
Colusa County		
Cooks Springs, Fred C. Lewe, lessee	Lodoga	Cooks Springs
Contra Costa County		
Alhambra Water Co.	Martinez	Martinez
Lake County		
Adams Mineral Springs, Clarence Prather	Adams, via Middletown	Adams
Bartlett Spring Co.	681 Geary St., San Francisco	Bartlett Springs
Norman Mineral Springs, H. C. Norman, Mgr.	Middletown	Middletown
Witter Springs, Inc., J. A. Carroll, Pres.	39th and Canal Sts., Chicago, Ill.	Witter Springs
Los Angeles County		
Cascade Water Co.	4556 York Blvd., Los Angeles	Los Angeles
Elysian Spring Water Co.	1536 Baxter, Los Angeles	Los Angeles
Holly Spring Water	2298 Holly Dr., Los Angeles	Los Angeles
Magnetic Spring Water Co.	936 Palm Ave., Sherman	Los Angeles
Mission Spring Water Co.	8938 Keith, Hollywood	Hollywood
Mountain Spring Water Co.	226 S. Avenue 54, Los Angeles	Los Angeles
Pure-lax Mineral Water Co.	3640 Griffin, Los Angeles	Los Angeles
Sparklett Bottled Water Co.	4500 York Blvd., Los Angeles	Los Angeles
White Rose Spring Water Co.	4835 N. Figueroa St., Los Angeles	Los Angeles
Marin County		
Purity Spring Water Co.	2050 Kearny St., San Francisco	Sausalito
Napa County		
Calistoga Bottling Works, G. Musante	Calistoga	Calistoga
Napa Soda Springs Co., G. H. T. Jackson	7 Front St., San Francisco	Napa
Samuels Soda Spring, N. Herlitz, Mgr.	Monticello	Monticello
Walters Spring Mineral Water Co.	St. Helena	Pope Valley

Orange County		
La Vida Mineral Water Co.	804 Spring Arcade Bldg., Los Angeles	Carbon Canyon
Placer County		
Ki-la-ga Co.	Lincoln	Valley
Riverside County		
Beulah Springs, Oscar C. McNicholl	Arlington	Arlington
San Bernardino County		
Arrowhead Hot Springs, California Cons. Water Co.	1566 E. Washington Blvd., Los Angeles	Arrowhead
San Diego County		
Rock Springs Co., E. S. Walck	R. 2, Box 442, Escondido	Escondido
San Francisco County		
Blue Crest Beverage Co.	615 Exeelsior Ave., San Francisco	San Francisco
Diamond Rock Spring Water Co., L. Paolinelli	247 Naples St., San Francisco	San Francisco
San Luis Obispo County		
Crystal Spring Water Co., W. R. Hudson	R.F.D. 2, Box 11, San Luis Obispo	San Luis Obispo
Mary Hill Mineral Well Co., Fred Merckel	Paso Robles	Paso Robles
Superior Spring Water, Frank Sweency	R.F.D. 2, Box 5, San Luis Obispo	San Luis Obispo
Santa Barbara County		
Veronica Mineral Springs Co.	699 Brannan St., San Francisco	Santa Barbara
Siskiyou County		
The Shasta Water Co.	6th and Brannan Sts., San Francisco	Dunsmuir
Yreka Coco Cola Bottling Works, Fred J. Meamber, Prop.	Yreka	Little Shasta
Sonoma County		
Agua Caliente Springs Co., T. H. Corcoran, Prop.	Agua Caliente	Agua Caliente
Barcal Springs, John Kolling	Preston	Preston
Fetters Mineral Springs, George Fetters	Fetters Springs	Fetters Springs

PLATINUM

Principal Platinum Producers in California in 1934

Operator	Address	Location of mine
Merced County		
Snelling Dredging Co.	Snelling	Snelling
Yuba Consolidated Gold Fields	351 California St., San Francisco	Snelling
Sacramento County		
Capital Dredging Co.	Balfour Bldg., San Francisco	Folsom
Natomas Co.	Forum Bldg., Sacramento	Natomas
Shasta County		
Gas Point Dredge, Staheli & Cerney	Box 127, Anderson	Gas Point
Stanislaus County		
La Grange Gold Dredging Co.	Mills Bldg., San Francisco	La Grange
Yuba County		
Yuba Consolidated Gold Fields	351 California St., San Francisco	Hammonton

POTASH

Operator	Address	Location of plant
San Bernardino County		
American Potash and Chemical Co.	Trona	Trona

Operator	Product	Address	Location of quarry
Imperial County—			
The Kalite Co., Ltd., O. J. Salisbury, Pres.	a	90 Oak Knoll Ave., Pasadena	Calipatria
Inyo County			
Chas. Brown	a	Shoshone	Shoshone
Tonopah & Tidewater Ry.	b	1014 Central Bldg., Los Angeles	Shoshone
Victorville Lime Rock Co.	a	2149 Bay St., Los Angeles	Coso Junction
Kern County			
Cudahy Packing Co.	b	803 Macy St., Los Angeles	Ceneda
Madera County			
Bennett & Jourden, L. T. Bennett	b	P. O. Box 583, Selma	Friant
Mono County			
California Quarries Corp.	a	1300 Quinby Bldg., Los Angeles	Laws
Napa County			
Pearl Pumice Quarries, Jas. H. Pearl	a	565 Monticello Rd., Napa	Monticello
San Luis Obispo County			
Gray Eagle Mine, M. L. Francis	b	Creston	Creston
Siskiyou County			
G. Z. Johnson	a, c	255 California St., San Francisco	Pumice Mountain

a. Pumice. b. Volcanic ash. c. Scoria.

PYRITE

Operator	Address	Location of mine
Alameda County		
Leona Chemical Co., D. A. McDonnell	Syndicate Bldg., Oakland	Leona Heights
Shasta County		
Mountain Copper Co., Wm. F. Kett, Mgr.	112 Market St., San Francisco	Matheson

QUICKSILVER

Principal Quicksilver Producers in California for 1934 out of a Total of 64 Operating Properties

Mine	Operator	Address	Location of mine
Colusa County			
Manzanita	S. W. Taylor & T. A. Dungan	Wilbur Springs	Wilbur Springs
Kings County			
Frediana	Frediana Mining Co., E. K. Anderson, Mgr.	Parkfield	Parkfield
Lake County			
Great Western	Bumsted Mining Co., E. J. Bumsted, Mgr.	Middletown	Middletown
Helen	L. S. Peterson	Middletown	Middletown
Mirabel	Mirabel Quicksilver Co., J. W. Doman, Supt.	Middletown	Middletown
Red Elephant	Big Six Mining Co., C. P. Morecy	Box 211, Calistoga	Reiff
Sulphur Bank	Sulphur Bank Syndicate, W. Bradley, Mgr.	Crocker Bldg., San Francisco	Lower Lake
Napa County			
Aetna	E. W. Erickson	Middletown	Aetna Springs
Ivanhoe	Harry Patten	Calistoga	Mt. St. Helena
Knoxville	Geo. E. Gamble	1431 Waverly St., Palo Alto	Monticello
Oat Hill & La Joya	R. A. Hanon & Co.	Middletown	Aetna Springs
Oat Hill Extension	Anderson & Russell	Box 162, Middletown	Aetna Springs
Switzer Property	Frank Adams	Pope Valley	Pope Valley

San Benito County			
Alpine	Harry A. Leonard Co.	Hollister	Hernandez
Aurora	Peter Bual	Paicines	Idria
Clear Creek	Webster & Zessan	Hernandez	Hernandez
Idria	New Idria Quicksilver Mines, Inc.	Mer. Exchange Bldg., San Francisco	Idria
San Luis Obispo County			
Bonanza	E. M. Merryfield	Adelaida	Adelaida
Carson	Ellard W. Carson	San Luis Obispo	Adelaida
Klau*	Klau Mine, Inc.	Pent House, Mills Bldg., San Francisco	Adelaida
Oceanic	Anglo American Mining Corp.	Mills Bldg., San Francisco	Cambria
Santa Clara County			
Guadelupe	Albert E. Golden	237 Wayne Ave., Oakland	Los Gatos
New Almaden (dump) (Senator)	F. P. Hauck & E. Hernandez	San Jose	Almaden
Sonoma County			
Cloverdale	Cavagnaro & Schor	Cloverdale	Cloverdale
Esperanza	Jas. G. Cortelyou	Cloverdale	Cloverdale
Skaggs Springs	Leo Curtis	Skaggs Springs	Skaggs Springs
Summerset	C. L. Bower & Sons	Cloverdale	Cloverdale
Trinity County			
Altoona	Altoona Quicksilver Mining Co., J. Frowenfield, Pres.	2446 Washington St., San Francisco	Castella

*Klau Mine, Inc. Took over the operation of Klau or Carson Mine in Dec., 1934.

SALT

Operator	Address	Location of plant
Alameda County		
Arden Salt Co.	225 Bush St., San Francisco	Newark and Mt. Eden
California et al. Plants, Leslie-California Salt Co.	110 Sansome St., San Francisco	Alvarado
Imperial County		
Mullet Island Development Co.	Calipatria	Calipatria
Kern County		
Long Beach Salt Co.	P.O. Box 28, Long Beach	Saltdale
Los Angeles County		
Long Beach Salt Co.	P.O. Box 28, Long Beach	Long Beach
Modoc County		
Surprise Valley Salt Works, Joshua H. Hutchinson	Cedarville	Lake City
Mono County		
Venita McPherson	Mono Lake	Mono Lake
Monterey County		
Monterey Bay Salt Co., E. C. Vierra, Mgr.	Moss Landing	Moss Landing
San Bernardino County		
California Rock-Salt Co.	2465 Hunter St., Los Angeles	Amboy
Rock Salt Products Co.	845 El Centro St., South Pasadena	Salt Marsh
San Diego County		
Western Salt Co.	917 J. D. Spreckels Bldg., San Diego	San Diego
San Mateo County		
Stauffer Chemical Co.	636 California St., San Francisco	Redwood City

Operator	Address	Location of quarry
Los Angeles County		
Alphonzo Bell Corp.	10601 Chalon Rd., Bel-Air, Los Angeles	Bel-Air
Binder Bros., W. H. Binder	285 N. Lake Ave., Pasadena	Boquet Canyon
Blue Goose Quarry, Robert Cox	1975 Lundy Ave., Pasadena	----------
R. L. Glover	917 W. 6th St., Los Angeles	Chatsworth
Monterey County		
Sierra Quarry, Harry Rogers	Box 136, Carmel	Carmel
Andrew Stewart	Carmel Valley	Carmel Valley
Napa County		
H. F. Galbreath	1742 Solano St., Berkeley	----------
San Luis Obispo County		
Mora Bros.	Box 121, Cambria	Cambria
Renolds Quarry, Thomas C. Renolds	R.F.D. A, Paso Robles	Paso Robles

SILICA

Operator	Product	Address	Location of mine
Contra Costa County			
Hazel-Atlas Glass Co. of California, Ltd.	b	89th Ave. and G St., Oakland	Summerville
Silica Co. of California, Ltd.	b	Brentwood	Brentwood
El Dorado County			
Snow Silica Deposit, Spicky Polish Corp., Owners	a	1401 3d St., San Francisco	Placerville
Monterey County			
Del Monte Products, A. J. Gunnell	b	Crocker Bldg., San Francisco	Del Monte
Riverside County			
P. J. Weisel, Inc.	a	La Habra	Corona
San Bernardino County			
Temescal Clay Co.	e	5601 S. Boyle Ave., Los Angeles	Hicks
San Diego County			
Standard Sanitary Mfg. Co., R. P. Jones, Mgr.	a	Campo	Campo

a. Quartz. b. Glass sand. e. Quartzite.

SILIMANITE—ANDALUSITE—CYANITE GROUP

Operator	Product	Address	Location of mine
Imperial County			
Vitrefrax Corp.	Cyanite	5050 Pacific St., Vernon, Los Angeles	Ogilby
Mono County			
Champion Spark Plug Co., Ceramic Division	Andalusite	Butler Ave. and Grand Trunk R. R., Detroit, Mich.	Mocalno

Principal Silver Producers in California in 1934

Mine	Type of mine	Operator	Address	Location of mine
Alpine County				
Colorado Hill	d	Colorado Hill Mining Co., c/o N. H. Bennett	Russ Bldg., San Francisco	Markleeville
Amador County				
Argonaut Central Eureka	a	Argonaut Mining Co., Ltd.	Jackson	Jackson
Tailing Dump	a	Central Tailing Co.	564 Market St., San Francisco	Sutter Creek
Kennedy	a	Kennedy Mining & Milling Co.	519 California St., San Francisco	Martell
Butte County				
Surcease	a	Hoefling Bros., Inc.	R.F.D. 4, Box 214, Chico	Yankee Hill
Calaveras County				
Boston	a	Boston, Mokelumne Mining Co., F. C. Moore, Supt.	Mokelumne Hill	Mokelumne Hill
Carson Hill	a	Carson Hill Gold Mine Corp.	Sonora	Melons
El Dorado County				
Montezuma	a	Montezuma-Apex Mining Co.	Box M, Placerville	El Dorado
Inyo County				
Carbonate	c	J. P. Madison	490 Post St., San Francisco	Shoshone
Estelle & Cerro Gordo	c	Estelle Mines Corp.	972 S. Fourth Ave., Los Angeles	Keeler
Fairy Queen	b	Charles Walker	Beatty, Nevada	Chloride Cliff
Ninety-Eight	d	J. B. Chase	Darwin	Darwin
Santa Rosa	c	Santa Rosa Min. and Devel. Co.	Keeler	Keeler
Kern County				
Elephant-Eagle	a	Elephant Eagle Mines Co.	Mojave	Mojave
Farrbright	a	Bright and Burton	Rosamond	Rosamond
Silver Queen	d	Golden Queen Mining Co.	Pacific Mutual Bldg., Los Angeles	Mojave
Soledad	a	W. Campbell et al	Mojave	Mojave
Standard	a	C. A. Heyn & O. J. Bruce	Mojave	Mojave
Susanna	a	Rogers & Gentry	Fairmont	Fairmont
Tropico	a	Burton Bros., Inc., Lessees, Tropico Mine	Rosamond	Rosamond

a. Gold. b. Silver. c. Silver-Lead. d. Gold and silver.

SILVER—Continued

Principal Silver Producers in California in 1934

Mine	Type of mine	Operator	Address	Location of mine
Mono County				
Silverado	b	Sierra Cons. Mines Co.	First National Bank Bldg., Reno, Nevada	Wellington, Nevada
Nevada County				
Empire, North Star, Murchie	a	Empire-Star Mines Co., Ltd.	Rm. 1507, 14 Wall St., New York, N. Y.	Grass Valley
Empress	a	Republic Gold Mining Corp.	P.O. Box 914, Grass Valley	Grass Valley
Idaho-Maryland	a	Idaho-Maryland Mines Co.	Russ Bldg., San Francisco	Grass Valley
Lava Cap	a	Lava Cap Gold Mining Corp.	Box 780, Nevada City	Nevada City
San Juan	a	Bradley Mining Co.	Crocker Bldg., San Francisco	North San Juan
Spanish	a	Spanish Mining Co.	Crocker Bldg., San Francisco	Washington
Placer County				
Auburn-Chicago	a	Auburn-Chicago Mining Co.	3443 Wilshire Blvd., Los Angeles	Penryn
Dairy Farm	a	Dairy Farm Gold Mine Corp.	Box 326, Lincoln	Lincoln
Sacramento County				
Natomas	e	Natomas Co.	Forum Bldg., Sacramento	Natomas
San Bernardino				
Coyote	d	Randsburg Silver Mines Corp., F. H. Lanley	702 Continental Bldg., Los Angeles	Red Mountain
Kelly	b	Kelly Gold & Silver Mines, Inc., Frank W. Roper	Hallongsworth Bldg., Los Angeles	Red Mountain
Vanderbuilt (Sidewinder)	a	Atascadero Mining Co.	Atascadero	Ivanpah
----------	c	C. O. Nordine	Trona	Trona
----------	b	P. A. Rose	Milligan via Blythe	Milligan
----------	c	R. P. Merritt	Orlando	Orlando
Shasta County				
Iron Mountain	a	The Mountain Copper Co., Ltd.	Balfour Bldg., San Francisco	Matheson
Sierra County				
Original 16 to 1 & Tightner	a	Original 16 to 1 Mines, Inc.	Russ Bldg., San Francisco	Alleghany
Yuba County				
Yuba	e	Yuba Consolidated Gold Fields	351 California St., San Francisco	Hammonton

a. Gold. b. Silver. c. Silver-Lead. d. Gold and Silver. e. Gold dredge.

SLATE

Operator	Product	Address	Location of quarry
El Dorado County			
Pacific Minerals Co., Ltd.		337 10th St., Richmond	Chili Bar
Inyo County			
Red Slate Quarry, J. D. Leary		Keeler	Keeler
Tuolumne County			
Whitney Slate Quarry, W. S. McLean		419 Bayshore Blvd., San Francisco	Hetch Hetchy

SOAPSTONE AND TALC

Operator	Product	Address	Location of mine
Butte County			
McLean Talc Deposit, W. S. McLean	a	419 Bayshore Blvd., San Francisco	McLean Spur
El Dorado County			
Pacific Minerals Co., Ltd., Chas. S. Renwick	a	337 10th St., Richmond	Shrub
Inyo County			
Mount Whitney Talc Co., Paul Judson, Secretary	b	Foss Bldg., Pasadena	Darwin
Sierra Talc Co., Franklin Booth, Mgr.	b	428 Union League Bldg., Los Angeles	Keeler
San Bernardino County			
Pacific Coast Talc Co.	b	2149 Bay St., Los Angeles	Silver Lake
Western Talc Co.	b	1901 E. Slauson Ave., Los Angeles	Acme

a Soapstone. b. Talc.

SODA

Operator	Product	Address	Location of plant
Inyo County			
Natural Soda Products Co.	a, b, d	650 Spring St., Los Angeles	Keeler
Pacific Alkali Co.	a	1206 Pacific Mutual Bldg., Los Angeles	Bartlett
San Bernardino County			
American Potash & Chemical Co.	a, c	Trona	Trona
West End Chemical Co.	a	706 Syndicate Bldg., Oakland	West End

a. Soda Ash. b. Sodium Bicarbonate. c. Salt Cake. d. Trona.

Under the heading of 'miscellaneous stone' there are four divisions—crushed rock, grinding mill pebbles, paving blocks, and sand and gravel. Crushed rock includes crushed rock that is used in macadam, ballast and for concrete; also rock used for rubble and riprap.

NOTE.—The California State Highway Commission and U. S. Bureau of Public Roads produces both crushed rock and sand and gravel in various places in the State used in construction and maintenance of highways, but not specified in this listing.

Operator	Product	Address	Location of pit or quarry
Alameda County			
California Rock & Gravel Co.	a	500 Call Bldg., San Francisco	Livermore
Hanifen Trucking Co.	a	Pleasanton	Pleasanton
Heafey-Moore Co., Leona Quarry	b	344 High St., Oakland	Oakland
Irvington Gravel Co., O. N. Hirsch	a	Irvington	Irvington
Kaiser Paving Co.	a	1522 Latham Square Bldg., Oakland	Eliot
Kemp Bros.	b	R.F.D. 1 Box 197, Strobridge Ave., Hayward	Hayward
Langdon Molding Sand, J. H. Langdon	c	R.F.D., Box 89, Niles	Decoto
Red Shale Quarry, W. S. McLean	d	419 Bayshore Blvd., San Francisco	Arroyo Mocho
Pacific Coast Aggregates, Inc.	a, b	85 2d St., San Francisco	Eliot and Niles
Alfred W. Petersen	a	P.O. Box 943, Livermore	Livermore
Ramos Quarry, Ramos Bros.	a	C and 7th Sts., Hayward	Hayward
San Leandro Rock Co., Lake Chabot Quarry	b	2485 Washington St., San Leandro	Lake Chabot
Amador County			
Amador County	a, b	Jackson	----------
Butte County			
Butte County	a, d	Oroville	----------
Bechtel-Kaiser Co., R. J. Kennedy, Mgr.	a, b	Oroville	Oroville
Cherokee Sand and Gravel Co., E. E. Myers	a	R.F.D. 4, Box 127, Chico	Cherokee Flat
J. E. Johnson Rock Co.	b	Weber Ave. and E St., Stockton	Chico
Lord & Bishop	a, b	Box 547, Oroville	Oroville
Pacific Coast Aggregates, Inc.	a, b	85 2d St., San Francisco	Oroville
Calaveras County			
Calaveras County	a	San Andreas	----------
Pacific Minerals Co., Ltd.	d	337 10th St., Richmond	Angels
Pardee Dam, East Bay Mun. Utility Dist.	b	1924 Broadway, Oakland	Pardee Dam

a. Sand and gravel. b. Crushed rock (macadam, ballast, rubble, riprap, etc.). c. Molding sand. d. Granules for roofing, terrazzo. e. Slag. f. Tube-mill pebbles. g. Decomposed granite.

STONE, MISCELLANEOUS—Continued

Under the heading of 'miscellaneous stone' there are four divisions—crushed rock, grinding mill pebbles, paving blocks, and sand and gravel. Crushed rock includes all crushed rock that is used in macadam, ballast and for concrete; also rock used for rubble and riprap.

Operator	Product	Address	Location of pit or quarry
Contra Costa County			
Contra Costa County	a	Martinez	
Antioch Asphalt Sand Co.	a	2008 Mission St., San Francisco	Antioch
Blake Bros. Co., Anson S. Blake	b	204 Balboa Bldg., San Francisco	Point Richmond
California Rock & Gravel Co.	a	500 Call Bldg., San Francisco	Antioch
Coburn Sand Plant, C. W. Coburn	a	1931 Santiago St., San Francisco	Antioch
Hutchison Co., Stege Quarry	b	1450 Harrison St., Oakland	Stege
Silico Co. of Calif., Ltd.	e	Brentwood	Brentwood
L. Stamm	a	Antioch	Antioch
El Dorado County			
El Dorado County	b	Placerville	Georgetown
Fresno County			
Grant-Service Rock Co., Cons.	a, b	T. W. Patterson Bldg., Fresno	El Prado
Pacific Coast Aggregates, Inc.	b	85 2d St., San Francisco	Piedra
Glenn County			
Southern Pacific Co.	a	65 Market St., San Francisco	Wyo
Stony Creek Gravel Co., E. B. Bishop	a	Box 325, Orland	Wyo
Humboldt County			
Benbow Co., Bondholders Protective Committee	a	Benbow	Benbow
D. A. Boyd	a	R.F.D., Arcata	Arcata
Hemstreet & Bell	a, b	501 11th St., Marysville	
Mercer-Fraser Co.	a	2d and Commercial Sts., Eureka	Essex
Northwestern Pacific R.R. Co., Wm. N. Neff, Gen. Supt.	a	Sausalito	South Fork
Imperial County			
Potholes Granite Quarry, U. S. Bureau of Reclamation	b	Winterhaven, c/o Yuma, Ariz.	Winterhaven
Inyo County			
Inyo Marble Co.	b, d	726-732 E. 29th St., Los Angeles	Lone Pine

Kern County			
Bakersfield Rock and Gravel Co.	a, b	Box 395, Station A, Bakersfield	----------
Kern Rock Co., Ltd.	a, b	P.O. Box 1697, Bakersfield	Kern River
Klassen Sand Pit, P. P. Klassen	a	1010 31st St., Bakersfield	Bakersfield
Lake County			
Charles Kuppinger	a	Lakeport	Lakeport
Lassen County			
Lassen County	a	Susanville	Susanville
Red River Lumber Co.	b	Westwood	Westwood
Basalt Rock Company	b	Petaluma	Susanville
Los Angeles County			
Arrow Rock Co.	a	P.O. Box 155, Monrovia	Monrovia
A., T. & S. F. R.R., I. L. Hibbard, Gen. Mgr.	a	609 Kerekhoff Bldg., Los Angeles	Forbes
Azusa Rock & Sand Co.	a, b	R.F.D., Azusa	Azusa
Richard R. Ball	a	Box 233, Walteria	Walteria
Bengal & Sons	a	1709 Monte Vista, Pasadena	Pasadena
Blue Diamond Corp., Ltd.	a	1650 S. Alameda St., Los Angeles	El Monte and Roscoe
Wm. J. Bonfield	g	2008 Laurel Canyon Rd., Los Angeles	Hollywood
L. Chandler	b	Lomita	Lomita
Consolidated Rock Produets Co.	a, b	2730 S. Alameda St., Los Angeles	Whittier and Fullerton
Ducey & Atwood Rock Co., R. K. Atwood, Pres.	a, b	Box 194, East Pasadena	East Pasadena
Eaton Canyon Rock and Sand Co.	a, b	2350 E. Colorado St., Pasadena	Pasadena
Graham Bros., Inc.	a, b, g	Long Beach	Catalina Island and Roscoe. El Monte and Rancho Qua's
Lindauer Corp.	a	Box 208, La Habra	La Habra
Los Angeles Harbor Dept., Bureau of Maintenance	b	City Hall, San Pedro	Santa Catalina
Los Angeles Dept. of Water and Power	b	207 S. Broadway, Los Angeles	----------
Los Angeles & Salt Lake R.R.	a	Pacific Electric Bldg., Los Angeles	----------
Los Angeles Decomposed Granite Co.	g	2171 W. Washington, Los Angeles	----------
Pacific Rock & Gravel Co.	a, b	458 S. Spring St., Los Angeles	Los Angeles
Reynolds Crushed Gravel	b, g	920 N. Humphreys Ave., Los Angeles	Los Angeles
San Antone Rock Co.	a	Claremont	Claremont
Santa Catalina Island Co.	a, b, g	Avalon	Santa Catalina Island
SecurityMaterial Co.	a	916 N. Formosa St., Los Angeles	Los Angeles
Edwin Sidebotham & Son, Inc., Sidebotham Sand Plant	a	MeFarland and L Sts., Wilmington	Lomita
Southern Pacific Co.	a	65 Market St., San Franeiseo	Wahoo
State Decomposed Granite Co.	g	2272 Laurel Canyon Blvd., Los Angeles	Hollywood
Venable Bros.	a	8831 Prince Ave., Los Angeles	Los Angeles

a. Sand and gravel. b. Crushed rock (macadam, ballast, rubble, riprap, etc.). e. Molding sand. d. Granules for roofing, terrazzo. g. Decomposed granite.

STONE, MISCELLANEOUS—Continued

Under the heading of 'miscellaneous stone' there are four divisions—crushed rock, grinding mill pebbles, paving blocks, and sand and gravel. Crushed rock includes all crushed rock that is used in macadam, ballast and for concrete; also rock used for rubble and riprap.

Operator	Product	Address	Location of pit or quarry
Madera County			
Southern Pacific Co.	b	65 Market St., San Francisco	Knowles
Marin County			
Marin County	a	San Rafael	
Daniels Con. Co.	b	503 Market St., San Francisco	San Rafael
Hutchison Company	b	1450 Harrison St., Oakland	San Quentin
Mariposa County			
Kelm Jasper Quarry, Pioneer Paper Co.	d	5500 S. Alameda St., Los Angeles	Bagby
Yosemite National Park	a, b	Yosemite	Yosemite Ntl. Park
Mendocino County			
Ukiah Gravel & Cement Co., John Freitas	a	Ukiah	Ukiah
Merced County			
Merced County	a	Merced	Los Banos
Fred Bagsdale	a, b	Merced	Merced
J. W. Huffman, Bair Creek Gravel Pit	a	Merced	Merced
Modoc County			
The Renshaw Sand, Rock & Gravel Co.	a	Alturas	Alturas
Monterey County			
Del Monte Properties, A. J. Gunnell	a, c	401 Crocker Bldg., San Francisco	Pacific Grove
Lime Kiln Creek Quarry, B. B. Gates	b	Cambria	Lime Kiln Creek
M. J. Murphy	b	Monte Verde and 9th Sts., Carmel	Carmel
Pacific Coast Aggregates, Inc.	a	85 2d St., San Francisco	Lapis and Pratteo
S. Ruthven, Seaside Sand Pit	a	Seaside	Seaside
Southern Pacific Co.	a	65 Market St., San Francisco	Lapis
Napa County			
Napa County	b	Napa	Napa
Basalt Rock Co.	b	8th St., Napa	Napa
Errington Quarry, Ray Errington	a	Napa	Napa
Harold Smith	a	St. Helena	St. Helena
Thorsen Gravel Pit, Harry Thorsen	a	St. Helena	St. Helena

Nevada County			
Nevada County	b	Nevada City	
Orange County			
Orange County	g	Santa Ana	
Consolidated Rock Products Co.	a, b	656 S. Los Angeles St., Los Angeles	Whittier and Fullerton
Graham Bros.	a, b	Long Beach	El Modena
A. J. Jorgensen	a	Garden Grove	Garden Grove
National Cement Pipe Co.	a	Drawer K, Santa Ana	Santa Ana
B. A. Stoffel	a	Anaheim	Anaheim
Ralph Welch	a	2609 W. Chapman St., Orange	Orange
Placer County			
Placer County	a	Auburn	
Auburn Lumber Co.	a	Auburn	Auburn
Union Granite Co., Mat Ruhkala	b	Rocklin	Rocklin
Riverside County			
Riverside County	a	Courthouse, Riverside	
Graham Bros.	a	Long Beach	Thermal, Whitewater
Kumpe-Hauser Construction Co., Ormand Quarry	b	R.F.D. 2, Riverside	Bly Junction
Kuster & Waterburg	a	Corona	Corona
Mutual Rock & Gravel Co.	a	Riverside	Riverside
Nevada-Pacific Mineral Co., Inc.	c	3363 Fruitland Rd., Los Angeles	Grand Terrace
Palo Verde Commercial Co.	a	Blythe	Blythe
City of Riverside	b	Riverside	Riverside
The Service Gravel Co., F. A. Braman	a	4324 10th St., Riverside	Riverside
P. J. Weisel, Industrial Sands	a, c	La Habra	Corona
Sacramento County			
Sacramento County	a	Sacramento	
Cannon & Co.	c	North Sacramento	Ben Ali
Del Paso Rock and Gravel Co.	a, b	H St. Rd., Sacramento	Del Paso
Lord & Bishop	a	Box 547, Oroville	Fair Oaks, Folsom
Mueke Sand & Gravel Co.	a, b	Mayhews	Mayhews
Pacific Coast Aggregates, Inc.	a, b	85 2d St., San Francisco	Fair Oaks, Mayhew and American River
Perkins Gravel Co.	a, b	Perkins	Perkins
Robert Powell & Co.	a	P.O. Box 815, Sacramento	American River
San Benito County			
San Benito County	a, b	Hollister	
Granite Rock Co.	b	Drawer M., Watsonville	Logan
Southern Pacific Co.	a, b	65 Market St., San Francisco	Logan

a. Sand and gravel. b. Crushed rock (macadam, ballast, rubble, riprap, etc). c. Molding sand. d. Granules for roofing, terrazzo. g. Decomposed granite.

STONE, MISCELLANEOUS—Continued

Under the heading of 'miscellaneous stone' there are four divisions—crushed rock, grinding mill pebbles, paving blocks ,and sand and gravel. Crushed rock includes all crushed rock that is used in macadam, ballast and for concrete; also rock used for rubble and riprap.

Operator	Product	Address	Location of pit or quarry
San Bernardino County			
A., T. & S. F. R.R.	a	609 Kerckhoff Bldg., Los Angeles	Gale
Consolidated Rock Products Co.	a, b	656 S. Los Angeles St., Los Angeles	
Declezville Stone Co., Ltd.	b	Box 698, San Pedro	S. Fontana
Hanawalt Bros.	a, b	2151 D St., La Verne	La Verne
Fourth Street Rock Crusher, A. O. Johnson	a	San Bernardino	San Bernardino
Pacific Minerals, Inc.	d	337 10th St., Richmond	Barstow
Pinneys Sand & Rock Service	a, b	Redlands	Redlands
Redlands Gravel Co.	a, b	Redlands	Redlands
San Bernardino Rock and Gravel Co.	a	311 Platt Bldg., San Bernardino	San Bernardino
Southern Pacific Co.	b	65 Market St., San Francisco	South Fontana
Triangle Rock & Gravel Co.	a, b	San Bernardino	San Bernardino
San Diego County			
Calavera Rock Corp.	b	Oceanside	Oceanside
Canyon Rock Co.	a, b	3911 5th Ave., San Diego	San Diego
Crystal Silica Sand Co.	a	Oceanside	Oceanside
H. G. Fenton Material Co.	a	13th and Imperial Ave., San Diego	San Diego
Jones & Klinger, E. J. Klinger	a	Mission Valley, San Diego	Mission Valley
R. M. Hubbard	c	406 W. Nutmeg St., San Diego	San Diego
John T. Momand	f	Box 381, Carlsbad	Oceanside
Nelson & Sloan	a	P.O. Box 832, Chula Vista	Chula Vista
Oceanside Rock & Sand Co.	a	Carlsbad	Oceanside
San Francisco County			
Mission Quarry Co.	b	210 Balboa Bldg., San Francisco	San Francisco
San Joaquin County			
Frank Marks	a, b	Newman	Tracy
Pacific Coast Aggregates, Inc.	a, b	85 2d St., San Francisco	Riverbank
Santa Fe Sand and Gravel Co., W. A. Arlington	a	P.O. Box 271, Escalon	Escalon
Elmer J. Warner	a	1128 E. Roosevelt St., Stockton	Stockton

San Luis Obispo County			
San Luis Obispo County	a	San Luis Obispo	
Guiton Molding Sand, Harold E. Guiton	c	Oceano	Oceano
Gularte Gravel Pit, M. Gularte	a	Santa Margarita	Santa Margarita
San Mateo County			
San Mateo County	b	Redwood City	
M. F. Cunha, Vasques Quarry	b	Main St., Half Moon Bay	Half Moon Bay
Holy Cross Cemetery	b	Colma	Colma
Industrial Mineral Products, W. B. Vestal	c	772 Bryant St., San Francisco	
Market St. Ry. Co., Daly's Quarry	b	58 Sutter St., San Francisco	Daly City
Santa Barbara County			
Gates Gravel Plant, Frank H. Gates	a	Santa Maria	Sisquoc
Lompoc, Harry Howerton, Street Supt.	a	Lompoc	Lompoc
Santa Clara County			
Arrowhead Gravel Co.	a	20 Maple Ave., Watsonville	Watsonville
Carroll Gravel Pit, R. D. Carroll	a	R.F.D. 4, Box 310A, San Jose	San Jose
A. G. Jahn	a	R.F.D. 4, Box 362, San Jose	San Jose
Jas. A. Lemieux	a	Box 341, Senter Rd., San Jose	San Jose
Los Gatos Sand and Gravel Co.	a	Los Gatos	Los Gatos
J. W. Lovejoy	b	R.F.D. 1, Box 88, Mountain View	Mountain View
Pacific Coast Aggregates, Inc.	a, b	85 2d St., San Francisco	Coyote and Campbell
Robinson & Rhodes, Stanford Quarry	b	Box 325, Palo Alto	Palo Alto
Southern Pacific Co.	a	65 Market St., San Francisco	Coyote
Sunnyvale Gravel Co.	a	Sunnyvale	Sunnyvale, Alamitos
Santa Cruz County			
Santa Cruz County	b	Santa Cruz	Santa Cruz
Central Supply Co.	a	P.O. Box 524, Santa Cruz	Santa Cruz
Mead Felton Sand & Gravel Co., H. G. Mead	a	Felton	Felton
Pacific Limestone Products Co.	b	Santa Cruz	Santa Cruz
Santa Cruz Portland Cement Co.	b	Crocker Bldg., San Francisco	Davenport
Shasta County			
Shasta County	a, b	Redding	
Diestelhorst Gravel Plant, Chas. Diestelhorst	a, b	1040 Liberty St., Redding	Redding

a. Sand and Gravel. b. Crushed Rock (macadam, ballast, rubble, riprap, etc.). c. Molding Sand. d. Granules for roofing, terrazzo. f. Tube-mill pebbles.

STONE, MISCELLANEOUS—Continued

Under the heading of 'miscellaneous stone' there are four divisions—crushed rock, grinding mill pebbles, paving blocks, and sand and gravel. Crushed rock includes all crushed rock that is used in macadam, ballast and for concrete; also rock used for rubble and riprap.

Operator	Product	Address	Location of pit or quarry
Siskiyou County			
Siskiyou County	a, b	Yreka	----------
Hemstreet & Bell	b	501 11th St., Marysville	----------
A. G. Fledderman	a	Yreka	Yreka
King Solomon Mines Co.	f	Croker Bldg., San Francisco	Black Bear
W. D. Miller Cons. Co.	a	Klamath Falls, Ore.	Graham Siding
A. Young	a	Yreka	Yreka
Solano County			
J. M. Nelson, Cordelia Quarry	b	Cordelia	Cordelia
Sonoma County			
Basalt Rock Co.	a	8th St., Napa	Healdsburg
S. Cabrol	b	Glen Ellen	Glen Ellen
Hein Bros. Basalt Rock Co., Mark Hein, Pres.	b	Petaluma	Petaluma
Independent Gravel Co.	a	Forestville	Forestville
Northwest Gravel Co.	a	844-A Mills Bldg., San Francisco	Chianti
Petaluma and Santa Rosa, E. R. R., E. H. Maggard, Mgr.	b	Petaluma	Stony Point
Stony Point Quarry, W. A. Wilson	b	Petaluma, Star Rt.	Stony Point
Stanislaus County			
Atlas Olympia Co.	a	209 Underwood Bldg., San Francisco	Orange Blossom
W. Haslan	a	Oakdale	Oakdale
Frank B. Marks	a	Newman	Crows Landing
Oakdale Irrigation Dist., M. E. Robinson, Auditor	a	Oakdale	Oakdale
Putman Sand & Gravel Co.	a	Modesto	Modesto
Rinehart Sand Pit, Rinehart Bros.	a	Modesto	Modesto
J. P. Scanlon, Scanlon Gravel Pit	a	Patterson	Crows Landing
Southern Pacific Co.	a	65 Market St., San Francisco	Newman
Tehama County			
Tehama County	a, b	Red Bluff	----------
Trinity County			
Trinity County	a	Weaverville	----------
Hemstreet & Bell	b	501 11th St., Marysville	----------

Tulare County			
Tulare County	g	Visalia	
J. J. Dugan & Sons	a	R.F.D. 2, Box 120, Porterville	Porterville
Hemstreet & Bell	a, b	501 11th St., Marysville	
O. C. Jeffers	a	Star Rt. 2, Porterville	Porterville
Nelson Concrete Pipe Co., John Nelson	a	Box 32, Strathmore	Strathmore
Porterville Cement Pipe Co.	a	P.O. Box 396, Porterville	Porterville
Supt. Sequoia National Park	a, b	Three Rivers	Sequoia Natl. Park
Tulare Rock Co., O. Holliday	a, b	Lindsay	Lindsay
Ventura			
Ventura County	b	Ventura	
El Rio Rock Co.	a, b	P.O. Box 381, Ventura	El Rio
Piru Rock Co.	a, b	Piru	Piru
Santa Clara Sand and Gravel Co.	a	P.O. Box 1002, Ventura	Ventura
Santa Paula Rock Co.	a	Willard Bridge, Santa Paula	Santa Paula
Saticoy Rock Products Co.	a, b	Saticoy	Saticoy-Ventura
Ventura Velvet Molding Sand, Chas. A. Cole	c	1355 Church St., Ventura	Ventura
Southern Pacific Co.	a, b	65 Market St., San Francisco	Rockbank
Yolo County			
C. and H. Gravel Co., J. J. Hartley	a	Davis	Davis
Yolo Gravel Co.	a	P.O. Box 7, Yolo	Yolo
Yuba County			
Hemstreet & Bell	a, b	501 11th St., Marysville	
N. F. Makle	a	715 D St., Marysville	Marysville
Pacific Coast Aggregates, Inc.	a	85 2d St., San Francisco	Marysville
Yuba River Sand Co.	a	Marysville	Marysville

a. Sand and gravel. b. Crushed rock (macadam, ballast, rubble, riprap, etc.). c. Molding sand. f. Tube-mill pebbles. g. Decomposed granite.

SULPHUR

Operator	Address	Location of mine
Alpine County		
Leviathan Sulphur Co., H. E. Bierch, Pres.	1010 Richfield Bldg., Los Angeles	Markleeville
Inyo County		
Delaware Sulphur Mines	2131 Bonita Dr., Glendale	Zurich
West Coast Sulphur Co.	1427 E. 4th St., Los Angeles	Zurich

TUNGSTEN

Operator	Address	Location of mine
Kern County		
Herbert Salinger	112 Market St., San Francisco	Bakersfield
San Bernardino County		
Atolia Mining Co., A. V. Udell	Crocker Bldg., San Francisco	Randsburg
Tulare County		
Tungsten Mine, H. O. Johanson	Posey	Posey

WOLLASTONITE

Operator	Address	Location of mine
Kern County		
John T. Thorndyke	1014¼ N. Mariposa Ave., Los Angeles	Code Siding

ZINC

Mine	Operator	Address	Location of mine
Inyo County			
Estelle & Cerro Gordo	Estelle Mines Corp.	972 S. 4th Ave., Los Angeles	Keeler

APPENDIX

MINING BUREAU ACT

Chap. 670 [Stats. 1913]; amended, Chap. 280 [Stats. 1929]; amended, Chap. 748 [Stats. 1933].

An act establishing a state mining bureau, creating the office of state mineralogist, fixing his salary and prescribing his powers and duties; providing for the employment of officers and employees of said bureau, making it the duty of persons in charge of mines, mining operations and quarries to make certain reports, providing for the investigation of mining operations, dealings and transactions and the prosecution for defrauding, swindling and cheating therein, creating a state mining bureau fund for the purpose of carrying out the provisions of this act and repealing an act entitled "An act to provide for the establishment, maintenance, and support of a bureau, to be known as the state mining bureau, and for the appointment and duties of a board of trustees, to be known as the board of trustees of the state mining bureau, who shall have the direction, management and control of said state mining bureau, and to provide for the appointment, duties, and compensation of a state mineralogist, who shall perform the duties of his office under the control, direction and supervision of the board of trustees of the state mining bureau," approved March 23, 1893, and all acts amendatory thereof and supplemental thereto or in conflict herewith.

[Approved June 16, 1913. In effect August 10, 1913.]

[Amendment (Sec. 16) approved May 14, 1929. In effect August 14, 1929.]
[Amendment (Sec. 10) approved June 5, 1933. In effect August 21, 1933.]

The people of the State of California do enact as follows:

SECTION 1. There is hereby created and established a state mining bureau. The chief officer of such bureau shall be the state mineralogist, which office is hereby created.

SEC. 2. It shall be the duty of the governor of the State of California and he is hereby empowered to appoint a citizen and resident of this state, having a practical and scientific knowledge of mining, to the office of state mineralogist. Said state mineralogist shall hold his office at the pleasure of the governor. He shall be a civil executive officer. He shall take and subscribe the same oath of office as other state officers. He shall receive for his services a salary of three hundred dollars ($300) per month, to be paid at the same time and in the same manner as the salaries of other state officers. He shall also receive his necessary traveling expenses when traveling on the business of his office. He shall give bond for the faithful performance of his duties in the sum of ten thousand dollars ($10,000), said bond to be approved by the governor of the State of California.

SEC. 3. Said state mineralogist shall employ competent geologists, field assistants, qualified specialists and office employees when necessary in the execution of his plans and operations of the bureau, and fix their compensation. The said employees shall be allowed their necessary traveling expenses when traveling on the business of said department and shall hold office at the pleasure of said state mineralogist.

SEC. 4. It shall be the duty of said state mineralogist to make, facilitate, and encourage, special studies of the mineral resources and mineral industries of the state. It shall be his duty: to collect statistics concerning the occurrence and production of the economically important minerals and the methods pursued in making their valuable constituents available for commercial use; to make a collection of typical geological and mineralogical specimens, especially those of economic and commercial importance, such collection constituting the museum of the state mining bureau; to provide a library of books, reports, drawings, bearing upon the mineral industries, and sciences of mineralogy and geology, and arts of mining and metallurgy, such library constituting the library of the state mining bureau; to make a collection of models, drawings and descriptions of the mechanical appliances used

in mining and metallurgical processes; to preserve and so maintain such collections and library as to make them available for reference and examination, and open to public inspection at reasonable hours; to maintain, in effect, a bureau of information concerning the mineral industries of this state, to consist of such collections and library, and to arrange, classify, catalogue, and index the data therein contained, in a manner to make the information available to those desiring it; to issue from time to time such bulletins as he may deem advisable concerning the statistics and technology of the mineral industries of this state.

SEC. 5. It is hereby made the duty of the owner, lessor, lessee, agent, manager or other person in charge of each and every mine, of whatever kind or character, within the state, to forward to the state mineralogist, upon his request, at his office not later than the thirty-first day of March, in each year, a detailed report upon forms which will be furnished showing the character of the mine, the number of men then employed, the method of working such mine and the general condition thereof, the total mineral production for the past year, and such owner, lessor, lessee, agent, manager or other person in charge of any mine within the state must furnish whatever information relative to such mine as the state mineralogist may from time to time require for the proper discharge of his official duties. Any owner, lessor, lessee, agent, manager or other person in charge of each and every mine of whatever kind or character within the state, who fails to comply with the above provisions shall be deemed guilty of a misdemeanor.*

SEC. 6. The state mineralogist now performing the duties of the office of state mineralogist shall perform the duties of the office of state mineralogist as in this act provided until the appointment and qualification of his successor as in this act provided.

SEC. 7. The said state mineralogist shall take possession, charge and control of the offices now occupied and used by the board of trustees and state mineralogist and the museum, library and laboratory of the mining bureau located in San Francisco as provided for by a certain act of the legislature approved March 23, 1893, and hereafter referred to in section fourteen hereof, and shall maintain such offices, museum, library and laboratory for the purposes provided in this act.

SEC. 8. Said state mineralogist or qualified assistant shall have full power and authority at any time to enter or examine any and all mines, quarries, wells, mills, reduction works, refining works and other mineral properties or working plants in this state in order to gather data to comply with the provisions of this act.

SEC. 9. The state mineralogist shall make a biennial report to the governor on or before the fifteenth day of September next preceding the regular session of the legislature.

SEC. 10. All moneys received by the State Mining Bureau (or State Division of Mines) or any officer thereof, from sales of publications issued by said bureau, shall be deposited at least once each month in the State treasury to the credit of a fund which is hereby created and designated "Division of mines revolving printing fund." Said fund shall be used and is hereby appropriated for the use of said bureau in addition to such other funds as may be from time to time appropriated by the Legislature, for the printing and publishing of reports, bulletins, and maps issued by the said bureau. The State Controller is authorized to require financial reports from the State Mining Bureau or any officer thereof.

SEC. 11. The said state mineralogist is hereby authorized and empowered to receive on behalf of this state, for the use and benefit of the state mining bureau, gifts, bequests, devises and legacies of real or other property and to use the same in accordance with the wishes of the donors, and if no instructions are given by said donors, to manage, use, and dispose of the gifts and bequests and legacies for the best interests of said state mining bureau and in such manner as he may deem proper.

SEC. 12. The state mineralogist may, whenever he deems it advisable, prepare a special collection of ores and minerals of California to be sent to or used at any world's fair or exposition in order to display the mineral wealth of the state.

SEC. 13. The state mineralogist is hereby empowered to fix a price upon and to dispose of to the public, at such price, any and all publications of the state mining bureau, including reports, bulletins, maps, registers or other publications, such price

* Sec. 19 of the Penal Code of California provides: "Except in cases where a different punishment is prescribed by this code, every offense declared to be a misdemeanor is punishable by imprisonment in a county jail not exceeding six months, or by a fine not exceeding five hundred dollars, or by both."

shall approximate the cost of publication and distribution. Any and all sums derived from such disposition, or from gifts or bequests made, as hereinbefore provided must be accounted for by said state mineralogist and turned over to the state treasurer to be credited to the mining bureau fund as provided for in section ten. He is also empowered to furnish without cost to public libraries the publications of the bureau and to exchange publications with other geological surveys and scientific societies, etc.

SEC. 14. The state mineralogist provided for by this act shall be the successor in interest of the board of trustees of the state mining bureau, and the state mineralogist, under and by virtue of that certain act, entitled "An act to provide for the establishment, maintenance, and support of a bureau, to be known as the state mining bureau, and for the appointment and duties of a board of trustees, to be known as the board of trustees of the state mining bureau, who shall have the direction, management, and control of said state mining bureau, and to provide for the appointment, duties, and compensation of a state mineralogist, who shall perform the duties of his office under the control, direction and supervision of the board of trustees of the state mining bureau," approved March 23, 1893, and all books, papers, documents, personal property, records, and property of every kind and description obtained or possessed, or held or controlled by the said board of trustees of the said state mining bureau, and the state mineralogist, and the clerks and employees thereof, under the provisions of said act of March 23, 1893, or any act supplemental thereto or amendatory thereof, shall immediately be turned over and delivered to the said state mineralogist herein provided for, who shall have charge and control thereof.

SEC. 15. That certain act entitled "An act to provide for the establishment, maintenance, and support of a bureau, to be known as the state mining bureau, and for the appointment and duties of a board of trustees, to be known as the board of trustees of the state mining bureau, and to provide for the appointment, duties and compensation of a state mineralogist, who shall perform the duties of his office under the control, direction, and supervision of the board of trustees of the state mining bureau," approved March 23, 1893, together with all acts amendatory thereof and supplemental thereto and all acts in conflict herewith are hereby repealed.

SEC. 16. For the purpose of this act and as used herein the term "mine" is hereby defined to embrace and include all mineral bearing properties of whatever kind or character whether underground, quarry, pit, well, spring or other source from which any mineral substance is or may be obtained, and the term "mineral" for the purposes of this act and whenever so used shall embrace and include any and all mineral products both metallic and nonmetallic, solid, liquid or gaseous, and mineral waters of whatever kind or character.

DEPARTMENT OF NATURAL RESOURCES ACT

Chap. 128 [Stats. 1927]; amended, Chap. 307 [Stats. 1929.]

An act to add a new article to chapter three of title one of part three of the Political Code to be numbered article two j, embracing sections three hundred seventy-three to three hundred seventy-three i, relating to a department of natural resources.

[Approved by the Governor April 13, 1927.]

[Amendment approved May 18, 1929.]

The people of the State of California do enact as follows:

SECTION 1. The Political Code is hereby amended by adding a new article to chapter III of title I of part III thereof, to be numbered article II*j*, embracing sections 373 to 373*i* and to read as follows:

ARTICLE II*j*.

DEPARTMENT OF NATURAL RESOURCES.

373. A department of the government of the State of California to be known as the department of natural resources is hereby created. The department shall be conducted under the control of an executive officer to be known as the director of natural resources, which office is hereby created. The director shall be appointed by and hold office at the pleasure of the governor and shall receive a salary of six thousand dollars per annum.

Except as in this article otherwise provided, the provisions of article II of this chapter, title, and part of the Political Code as adopted at the forty-fourth session of the Legislature and as the same may be amended from time to time, shall govern and apply to the conduct of the department of natural resources in every respect the same as if such provisions were herein set forth at length and wherever in said article II the term "head of the department" or similar designation occurs, the same shall for the purposes of this article mean the director of natural resources.

373*a*. For purposes of administration the department shall be forthwith organized by the director thereof, subject to the approval of the governor, in such manner as he shall deem necessary to properly segregate and conduct the work of the department, and the director shall have power to appoint, in accordance with the civil service and other provisions of law, such deputies, officers and other expert and clerical assistants as may be necessary. The work of the department is hereby divided into at least four divisions to be known as the division of forestry, the division of parks, the division of fish and game, and the divison of mines.

373*b*. The division of mines shall be administered through a chief who shall be appointed by the director of natural resources upon the nomination of the state mining board, the chief to be a technically trained mining engineer and to be known as the state mineralogist; such chief shall receive a salary of six thousand dollars per annum. General policies for the guidance of the division of mines shall be determined by a board to be known as the state mining board, which shall consist of five members appointed by and to hold office at the pleasure of the governor.

373*c*. The division of forestry shall be administered through a chief of division who shall be known as the state forester, who shall be a technically trained forester, appointed by the director of natural resources upon nomination by the state board of forestry hereinafter provided. General policies for the guidance of the division of forestry shall be determined by a state board of forestry which shall consist of seven members appointed by and holding office at the pleasure of the governor. Of the seven members one shall be familiar with the pine timber industry, one with the redwood industry, one with the live stock industry, one with general agriculture and one with the problems of water conservation.

373*d*. The division of parks shall be administered through a chief of division who shall be appointed by the director of natural resources upon nomination by the state park commission hereinafter provided. General policies for the administration of the state park system shall be determined by the state park commission

which is hereby created to consist of five members appointed by the governor and holding office at his pleasure.

373*e*. The division of fish and game shall be administered through a fish and game commission consisting of three members appointed by and holding office at the pleasure of the governor.

373*f*. The chiefs of the divisions of forestry and parks respectively shall receive such salaries as may be determined by the director with the approval of the governor. The director of natural resources and the chief of each division before entering upon his duties shall execute to the State of California an official bond in the penal sum of twenty-five thousand dollars conditioned upon the faithful performance of his duties. The members of the board of forestry, the state parks commission and fish and game commission shall serve without compensation, but shall be entitled to their actual expenses incurred in the performance of their duties.

373*g*. The department of natural resources shall succeed to and is hereby invested with all the duties, powers, purposes, responsibilities and jurisdiction of the state mining bureau, state mineralogist, department of petroleum and gas, state oil and gas supervisor, state forester, state board of forestry, California redwood park commission, San Pasqual battlefield commission, Mount Diablo park commission, state fish and game commission, state fish and game commissioners, and, except as herein otherwise provided, of the several officers, deputies and employees of such bodies and offices, and whenever by the provisions of any statute or law now in force or that may hereafter be enacted a duty or jurisdiction is imposed or authority conferred upon any of said officers, offices, bodies, deputies or employees by any statute the enforcement of which is transferred to the department, such duty, jurisdiction and authority are hereby imposed upon and transferred to the department of natural resources and the appropriate officers thereof with the same force and effect as though the title of said department of natural resources had been specifically set forth and named therein in lieu of the name of any such body, office, officer, deputy or employee. Said bodies and offices, the duties, powers, purposes, responsibilities and jurisdiction of which are so transferred and vested in the department of natural resources, and the positions of all officers, deputies and employees thereunder, are and each of them is hereby abolished and shall have no further legal existence, but the statutes and laws under which they existed and all laws prescribing their duties, powers, purposes, responsibilities and jurisdiction, together with all lawful rules and regulations established thereunder are hereby expressly continued in force.

The department of natural resources shall be in possession and control of all records, books, papers, offices, equipment, supplies, moneys, funds, appropriations, land and other property real or personal now or hereafter held for the benefit or use of said bodies, offices and officers.

The boards of district oil and gas commissioners, the offices of district oil and gas commissioners and the board of review, correction and equalization created by the act approved June 10, 1915, establishing the department of petroleum and gas, are hereby respectively continued in force with the powers, duties, responsibilities and jurisdiction in them vested by the provisions of said act approved June 10, 1915, as amended; *provided*, that said board of review shall consist of the director of natural resources, the director of finance and the chairman of the state board of equalization.

373*h*. The management and control of the property acquired by the State of California under or pursuant to the provisions of the act entitled "An act to accept the gift to the state of San Pasqual battlefield in San Diego county, to provide for collecting and systematizing the history of said battle, for determining the exact location thereof, and to report a suitable method of marking said battlefield and commemorating the heroism of those Americans who fought and died there," approved May 11, 1919, is hereby transferred to and vested in the department of natural resources.

373*i*. From and after the date upon which this act takes effect, the department of natural resources shall be and is hereby authorized and empowered to expend the moneys in any appropriation or in special fund in the state treasury now remaining or made available by law for the administration of the provisions of all the statutes the administration of which is committed to the department, or for the use, support, or maintenance of any board, bureau, commission, department, office or officer whose duties, powers, and functions are, by the provisions of this article, transferred to and conferred upon the department of natural resources. Such expenditures by the department shall be made in accordance with law in carrying out the purposes for which such appropriations were made or such special funds created.

PUBLICATIONS OF THE DIVISION OF MINES

During the past fifty-four years, in carrying out the provisions of the organic act creating the former California State Mining Bureau, there have been published many reports, bulletins and maps which go to make up a library of detailed information on the mineral industry of the State, a large part of which could not be duplicated from any other source.

One feature that has added to the popularity of the publications is that many of them have been distributed without cost to the public, and even the more elaborate ones have been sold at a price which barely covers the cost of printing.

Owing to the fact that funds for the advancing of the work of this department have usually been limited, the reports and bulletins mentioned are printed in limited editions many of which are now entirely exhausted.

Copies of such publications are available, however, in the offices of the Division of Mines, in the Ferry Building, San Francisco; State Building, Los Angeles; State Office Building, Sacramento; Redding; and Division of Oil and Gas at Santa Barbara, Santa Paula, Coalinga, Taft, Bakersfield. They may also be found in many public, private and technical libraries in California and other states and foreign countries.

A catalog of all publications from 1880 to 1917, giving a synopsis of their contents, is issued as Bulletin No. 77.

Publications in stock may be obtained by addressing any of the above offices and enclosing the requisite amount in the case of publications that have a list price. Only coin, stamps or money orders should be sent, and it will be appreciated if remittance is made in this manner rather than by personal check.

Money orders should be made payable to the Division of Mines.

NOTE.—The Division of Mines frequently receives requests for some of the early Reports and Bulletins now out of print, and it will be appreciated if parties having such publications and wishing to dispose of them will advise this office.

REPORTS

Asterisks (**) indicate the publication is out of print.

	Price	Shipping Charges
**First Annual Report of the State Mineralogist, 1880, 43 pp. Henry G. Hanks	----	----
**Second Annual Report of the State Mineralogist, 1882, 514 pp., 4 illustrations, 1 map. Henry G. Hanks	----	----
**Third Annual Report of the State Mineralogist, 1883, 111 pp., 21 illustrations. Henry G. Hanks	----	----
**Fourth Annual Report of the State Mineralogist, 1884, 410 pp., 7 illustrations. Henry G. Hanks	----	----
**Fifth Annual Report of the State Mineralogist, 1885, 234 pp., 15 illustrations, 1 geological map. Henry G. Hanks	----	----
**Sixth Annual Report of the State Mineralogist, Part I, 1886, 145 pp., 3 illustrations, 1 map. Henry G. Hanks	----	----
**Part II, 1887, 222 pp., 36 illustrations. William Irelan, Jr.	----	----
**Seventh Annual Report of the State Mineralogist, 1887, 315 pp. William Irelan, Jr.	----	----
**Eighth Annual Report of the State Mineralogist, 1888, 948 pp., 122 illustrations. William Irelan, Jr.	----	----
**Ninth Annual Report of the State Mineralogist, 1889, 352 pp., 57 illustrations, 2 maps. William Irelan, Jr.	----	----
**Tenth Annual Report of the State Mineralogist, 1890, 983 pp., 179 illustrations, 10 maps. William Irelan, Jr.	----	----
Eleventh Report (First Biennial) of the State Mineralogist, for the two years ending September 15, 1892, 612 pp., 73 illustrations, 4 maps. William Irelan, Jr.	$1.00	$0.20
**Twelfth Report (Second Biennial) of the State Mineralogist, for the two years ending September 15, 1894, 541 pp., 101 illustrations, 5 maps. J. J. Crawford	----	----
**Thirteenth Report (Third Biennial) of the State Mineralogist, for the two years ending September 15, 1896, 726 pp., 93 illustrations, 1 map. J. J. Crawford	----	----
Chapters of the State Mineralogist's Report, Biennial Period, 1913–1914, Fletcher Hamilton:		
**Mines and Mineral Resources, Amador, Calaveras and Tuolumne Counties, 172 pp., paper	----	----
Mines and Mineral Resources, Colusa, Glenn, Lake, Marin, Napa, Solano, Sonoma and Yolo Counties, 208 pp., paper	.50	.10
**Mines and Mineral Resources, Del Norte, Humboldt and Mendocino Counties, 59 pp., paper	----	----
**Mines and Mineral Resources, Fresno, Kern, Kings, Madera, Mariposa, Merced, San Joaquin and Stanislaus Counties, 220 pp., paper	----	----
**Mines and Mineral Resources of Imperial and San Diego Counties, 113 pp., paper	----	----
**Mines and Mineral Resources, Shasta, Siskiyou and Trinity Counties, 180 pp., paper	----	----
**Fourteenth Report of the State Mineralogist, for the Biennial Period 1913–1914, Fletcher Hamilton, 1915: A General Report on the Mines and Mineral Resources of Amador, Calaveras, Tuolumne, Colusa, Glenn, Lake, Marin, Napa, Solano, Sonoma, Yolo, Del Norte, Humboldt, Mendocino, Fresno, Kern, Kings, Madera, Mariposa, Merced, San Joaquin, Stanislaus, San Diego, Imperial, Shasta, Siskiyou and Trinity Counties, 974 pp., 275 illustrations, cloth	----	----
Chapters of the State Mineralogist's Report, Biennial Period, 1915–1916. Fletcher Hamilton:		
**Mines and Mineral Resources, Alpine, Inyo and Mono Counties, 176 pp., paper	----	----
Mines and Mineral Resources, Butte, Lassen, Modoc, Sutter and Tehama Counties, 91 pp., paper	.50	.05
**Mines and Mineral Resources, El Dorado, Placer, Sacramento and Yuba Counties, 198 pp., paper	----	----
Mines and Mineral Resources, Monterey, San Benito, San Luis Obispo, Santa Barbara and Ventura Counties, 183 pp., paper	.65	.10
**Mines and Mineral Resources, Los Angeles, Orange and Riverside Counties, 136 pp., paper	----	----
**Mines and Mineral Resources, San Bernardino and Tulare Counties, 186 pp., paper	----	----

REPORTS—Continued

Asterisks (**) indicate the publication is out of print.

	Price	Shipping Charges
**Fifteenth Report of the State Mineralogist, for the Biennial Period 1915–1916, Fletcher Hamilton, 1917: A General Report on the Mines and Mineral Resources of Alpine, Inyo, Mono, Butte, Lassen, Modoc, Sutter, Tehama, Placer, Sacramento, Yuba, Los Angeles, Orange, Riverside, San Benito, San Luis Obispo, Santa Barbara, Ventura, San Bernardino and Tulare Counties, 990 pp., 413 illustrations, cloth	----	----
Chapters of the State Mineralogist's Report, Biennial Period, 1917–1918, Fletcher Hamilton:		
**Mines and Mineral Resources of Nevada County, 270 pp., paper	----	----
Mines and Mineral Resources of Plumas County, 188 pp., paper	$0.50	$0.10
Mines and Mineral Resources of Sierra County, 144 pp., paper	.50	.10
Seventeenth Report of the State Mineralogist, 1920, 'Mining in California during 1920,' Fletcher Hamilton; 562 pp., 71 illustrations, cloth	1.75	.25
Eighteenth Report of the State Mineralogist, 1922, 'Mining in California,' Fletcher Hamilton. Chapters published monthly beginning with January, 1922:		
**January, **February, **March, **April, **May, **June, July, August, September, October, **November, December, 1922	.25	.05
Chapters of Nineteenth Report of the State Mineralogist, 'Mining in California,' Fletcher Hamilton and Lloyd L. Root. January, February, March, September, 1923	.25	.05
Chapters of Twentieth Report of the State Mineralogist, 'Mining in California,' Lloyd L. Root. Published quarterly. January, April, **July, October, 1924, per copy	.25	.05
Chapters of Twenty-first Report of the State Mineralogist, 'Mining in California,' Lloyd L. Root. Published quarterly:		
January, 1925, Mines and Mineral Resources of Sacramento, Monterey and Orange Counties	.25	.05
April, 1925, Mines and Mineral Resources of Calaveras, Merced, San Joaquin, Stanislaus and Ventura Counties	.25	.05
July, 1925, Mines and Mineral Resources of Del Norte, Humboldt and San Diego Counties	.25	.10
**October, 1925, Mines and Mineral Resources of Siskiyou, San Luis Obispo and Santa Barbara Counties	----	----
Chapters of Twenty-second Report of the State Mineralogist, 'Mining in California,' Lloyd L. Root. Published quarterly:		
**January, 1926, Mines and Mineral Resources of Trinity and Santa Cruz Counties	----	----
April, 1926, Mines and Mineral Resources of Shasta, San Benito and Imperial Counties	.25	.10
July, 1926, Mines and Mineral Resources of Marin and Sonoma Counties	.25	.05
**October, 1926, Mines and Mineral Resources of El Dorado and Inyo Counties, also report on Minaret District, Madera County	----	----
Chapters of Twenty-third Report of the State Mineralogist, 'Mining in California,' Lloyd L. Root. Published quarterly:		
January, 1927, Mines and Mineral Resources of Contra Costa County; Santa Catalina Island	.25	.10
April, 1927, Mines and Mineral Resources of Amador and Solano Counties	.25	.05
July, 1927, Mines and Mineral Resources of Placer and Los Angeles Counties	.25	.10
October, 1927, Mines and Mineral Resources of Mono County	.25	.05
Chapters of Twenty-fourth Report of the State Mineralogist, 'Mining in California,' Lloyd L. Root. Published quarterly:		
January, 1928, Mines and Mineral Resources of Tuolumne County	.25	.05
April, 1928, Mines and Mineral Resources of Mariposa County	.25	.05
July, 1928, Mines and Mineral Resources of Butte and Tehama Counties	.25	.05
October, 1928, Mines and Mineral Resources of Plumas and Madera Counties	.25	.05
Chapters of Twenty-fifth Report of the State Mineralogist, 'Mining in California,' Walter W. Bradley. Published quarterly:		
**January, 1929, Mines and Mineral Resources of Lassen, Modoc and Kern Counties; also on Special Placer Machines	----	----

REPORTS—Continued

Asterisks (**) indicate the publication is out of print.

	Price	Shipping Charges
April, 1929, Mines and Mineral Resources of Sierra, Napa, San Francisco and San Mateo Counties	$0.25	$0.10
July, 1929, Mines and Mineral Resources of Colusa, Fresno and Lake Counties	.25	.10
October, 1929, Mines and Mineral Resources of Glenn, Alameda, Mendocino and Riverside Counties	.25	.10
Chapters of Twenty-sixth Report of the State Mineralogist, 'Mining in California,' Walter W. Bradley. Published quarterly:		
January, 1930, Mines and Mineral Resources of Santa Clara County; also Barite in California	.25	.05
April, 1930, Mines and Mineral Resources of Nevada County; also Mineral Paint Materials in California	.25	.05
July, 1930, Mines and Mineral Resources of Yuba and San Bernardino Counties; also Commercial Grinding Plants in California	.25	.10
October, 1930, Mines and Mineral Resources of Butte, Kings and Tulare Counties; also Geology of Southwestern Mono County (Preliminary)	.25	.10
Chapters of Twenty-seventh Report of the State Mineralogist, 'Mining in California,' Walter W. Bradley. Published quarterly:		
January, 1931, Preliminary Report on Economic Geology of the Shasta Quadrangle. Beryllium and Beryl. The New Tariff and Nonmetallic Products. Crystalline Talc. Decorative Effects in Concrete	.25	.10
April, 1931, Stratigraphy of the Kreyenhagen Shale. Diatoms and Silicoflagellates of the Kreyenhagen Shale. Foraminifera of the Kreyenhagen Shale. Geology of Santa Cruz Island	.25	.10
July, 1931. (Yuba, San Bernardino.) Feldspar, Silica, Andalusite and Cyanite Deposits of California. Note on a Deposit of Andalusite in Mono County; its occurrence and chemical importance. Bill creating Trinity and Klamath River Fish and Game District and its effect upon mining	.25	.10
October, 1931. (Alpine.) Geology of the San Jacinto Quadrangle south of San Gorgonio Pass, California. Notes on Mining Activities in Inyo and Mono Counties in July, 1931	.25	.05
Chapters of Twenty-eighth Report of the State Mineralogist, 'Mining in California,' Walter W. Bradley. Published quarterly:		
January, 1932, Economic Mineral Deposits of the San Jacinto quadrangle. Geology and Physical Properties of Building Stone from Carmel Valley. Contributions to the Study of Sediments. Sediments of Monterey Bay. Sanbornite	.25	.10
**April, 1932. Elementary Placer Mining Methods and Gold Saving Devices. The Pan, Rocker and Sluice Box. Prospecting for Vein Deposits. Bibliography of Placer Mining	----	----
Abstract from April quarterly: Elementary Placer Mining Methods and Gold Saving Devices. Types of Deposits. Simple Equipment. Special Machines. Dry Washing. Black Sand Treatment. Marketing of Products. Placer Mining Areas. Laws. Prospecting for Quartz Veins. Bibliography (mimeographed)	.20	.05
July-October. (Ventura.) Report accompanying Geologic Map of Northern Sierra Nevada. Fossil Plants in Auriferous Gravels of the Sierra Nevada. Glacial and Associated Stream Deposits of the Sierra Nevada. Jurassic and Cretaceous Divisions in the Knoxville-Shasta Succession of California. Geology of a Part of the Panamint Range. Economic Report of a Part of the Panamint Range. Acquiring Mining Claims Through Tax Title. The Biennial Report of State Mineralogist	.50	.15
Chapters of Report XXIX, 1933 (quarterly): titled "California Journal of Mines and Geology," containing the following:		
January-April. Gold Deposits of the Redding and Weaverville Quadrangles. Geologic Formations of the Redding-Weaverville District, Northern California. Geology of Portions of Del Norte and Siskiyou Counties. Applications of		

REPORTS—Continued

Asterisks (**) indicate the publication is out of print.

	Price	Shipping Charges
Geology to Civil Engineering. The Lakes of California. Discovery of Piedmontite in the Sierra Nevada. Tracing 'Buried River' Channel Deposits by Geomagnetic Methods. Geologic Map of Redding-Weaverville District, showing gold mines and prospects. Geologic Map showing various mines and prospects of part of Del Norte and Siskiyou Counties--	$0.80	$0.15
July-October. Gold Resources of Kern County. Limestone Deposits of the San Farncisco Region. Limestone Weathering and Plant Associations of the San Francisco Region. Booming. Death Valley National Monument, California. Placer Mining Districts, Senate Bill 480. Navigable Waters, Assembly Bill 1543	.80	.10
Chapters of Report XXX, 1934 (quarterly): titled "California Journal of Mines and Geology," containing the following:		
January. Resurrection of Early Surfaces in the Sierra Nevada. Geology and Mineral Resources of Northeastern Madera County. Geology and Mineral Deposits of Laurel and Convict Basins, Southwestern Mono County. Notes on Sampling as Applied to Gold Quartz Deposits	.40	.10
April-July. Elementary Placer Mining in California and Notes on the Milling of Gold Ores	.80	.10
October. Current Mining Developments in Northern California. Current Mining Activity in Southern California. Geology and Mineral Resources of the Julian District, San Diego County. Geology and Mineral Resources of Elizabeth Lake Quadrangle. Dry Placers of Northern Mohave Desert. Biennial Report of State Mineralogist. Assessment Work Within Withdrawn Areas	.40	.10
Subscription, $1.50 in advance (by calendar year, only).		
Chapters of State Oil and Gas Supervisor's Report:		
Summary of Operations—California Oil Fields, July, 1918, to March, 1919 (one volume)	Free	----
Summary of Operations—California Oil Fields. Published monthly, beginning April, 1919:		
**April, **May, **June, **July, **August, **September, **October, **November, **December, 1919	----	----
**January, **February, **March, **April, **May, **June, **July, **August, **September, **October, **November, **December, 1920	----	----
January, **February, **March, April, **May, **June, **July, August, **September, **October, **November, **December, 1921	Free	----
January, February, March, April, May, June, **July, **August, September, **October, **November, December, 1922	Free	----
January, February, **March, **April, May, **June, **July, August, September, **October, November, **December, 1923	Free	----
January, February, March, April, May, June, **July, August, September, October, November, December, 1924	Free	----
January, February, March, April, May, June, July, August, September, October, November, December, 1925	Free	----
January, February, March, April, May, June, July, August, September, October, November, December, 1926	Free	----
January, February, March, April, May, June, July, August, September, October, November, December, 1927	Free	----
January, February, March, April, **May, June, July, August, September, October, **November, **December, 1928	Free	----
January, February, March, April, May, June, July-August-September, October-November-December, 1929	Free	----
(Published quarterly beginning July, 1929)		
January-February-March, April-May-June, July-August-September, October-November-December, 1930	Free	----
January-February-March, April-May-June, July-August-September, 1931	Free	----
January, February, March, April, May, June, July, August, September, October, November, December, 1932	Free	----
January, February, March, 1933	Free	----
April, May, June, 1933	Free	----
July, August, September, 1933	Free	----

BULLETINS

Asterisks (**) indicate the publication is out of print.

	Price	Shipping Charges
**Bulletin No. 1. A Description of Some Desiccated Human Remains, by Winslow Anderson. 1888, 41 pp., 6 illustrations	----	----
**Bulletin No. 2. Methods of Mine Timbering, by W. H. Storms. 1894, 58 pp., 75 illustrations	----	----
**Bulletin No. 3. Gas and Petroleum Yielding Formations of Central Valley of California, by W. L. Watts. 1894, 100 pp., 13 illustrations, 4 maps	----	----
**Bulletin No. 4. Catalogue of Californian Fossils, by J. G. Cooper, 1894, 73 pp., 67 illustrations. (Part I was published in the Seventh Annual Report of the State Mineralogist, 1887)	----	----
**Bulletin No. 5. The Cyanide Process, 1894, by Dr. A. Scheidel. 140 pp., 46 illustrations	----	----
**Bulletin No. 6. California Gold Mill Practices, 1895, by E. B. Preston, 85 pp., 46 illustrations	----	----
**Bulletin No. 7. Mineral Production of California, by Counties, for the year 1894, by Charles G. Yale. Tabulated sheet	----	----
**Bulletin No. 8. Mineral Production of California, by Counties, for the year 1895, by Charles G. Yale. Tabulated sheet	----	----
**Bulletin No. 9. Mine Drainage, Pumps, etc., by Hans C. Behr. 1896, 210 pp., 206 illustrations	----	----
**Bulletin No. 10. A bibliography Relating to the Geology, Paleontology and Mineral Resources of California, by Anthony W. Vogdes. 1896, 121 pp.	----	----
**Bulletin No. 11. Oil and Gas Yielding Formations of Los Angeles, Ventura and Santa Barbara Counties, by W. L. Watts. 1897, 94 pp., 6 maps, 31 illustrations	----	----
**Bulletin No. 12. Mineral Production of California, by Counties, for 1896, by Charles G. Yale. Tabulated sheet	----	----
**Bulletin No. 13. Mineral Production of California, by Counties, for 1897, by Charles G. Yale. Tabulated sheet	----	----
**Bulletin No. 14. Mineral Production of California, by Counties, for 1898, by Charles G. Yale	----	----
**Bulletin No. 15. Map of Oil City Fields, Fresno County, by John H. Means. 1899	----	----
**Bulletin No. 16. The Genesis of Petroleum and Asphaltum in California, by A. S. Cooper. 1899, 39 pp., 29 illustrations	----	----
**Bulletin No. 17. Mineral Production of California, by Counties, for 1899, by Charles G. Yale. Tabulated sheet	----	----
**Bulletin No. 18. Mother Lode Region of California, by W. H. Storms. 1900, 154 pp., 49 illustrations	----	----
**Bulletin No. 19. Oil and Gas Yielding Formations of California, by W. L. Watts. 1900, 236 pp., 60 illustrations, 8 maps	----	----
**Bulletin No. 20. Synopsis of General Report of State Mining Bureau, by W. L. Watts. 1901, 21 pp. This bulletin contains a brief statement of the progress of the mineral industry in California for the four years ending December, 1899	----	----
**Bulletin No. 21. Mineral Production of California, by Counties, by Charles G. Yale. 1900. Tabulated sheet	----	----
**Bulletin No. 22. Mineral Production of California for Fourteen Years, by Charles G. Yale. 1900. Tabulated sheet	----	----
**Bulletin No. 23. The Copper Resources of California, by P. C. DuBois, F. M. Anderson, J. H. Tibbits and G. A. Tweedy. 1902, 282 pp., 69 illustrations, 9 maps	----	----
**Bulletin No. 24. The Saline Deposits of California, by G. E. Bailey. 1902, 216 pp., 99 illustrations, 5 maps	----	----
**Bulletin No. 25. Mineral Production of California, by Counties, for 1901, by Charles G. Yale. Tabulated sheet	----	----
**Bulletin No. 26. Mineral Production of California for the Past Fifteen Years, by Charles G. Yale. 1902. Tabulated sheet	----	----
**Bulletin No. 27. The Quicksilver Resources of California, by William Forstner. 1903, 273 pp., 144 illustrations, 8 maps	----	----
**Bulletin No. 28. Mineral Production of California for 1902, by Charles G. Yale. Tabulated sheet	----	----
**Bulletin No. 29. Mineral Production of California for Sixteen Years by Charles G. Yale. 1903. Tabulated sheet	----	----

BULLETINS—Continued

Asterisks (**) indicate the publication is out of print.

	Price	Shipping Charges
**Bulletin No. 30. Bibliography Relating to the Geology, Paleontology and Mineral Resources of California, by A. W. Vogdes. 1903. 290 pp.	----	----
**Bulletin No. 31. Chemical Analyses of California Petroleum, by H. N. Cooper. 1904. Tabulated sheet	----	----
**Bulletin No. 32. Production and Use of Petroleum in California, by Paul W. Prutzman. 1904, 230 pp., 116 illustrations, 14 maps	----	----
**Bulletin No. 33. Mineral Production of California, by Counties, for 1903, by Charles G. Yale. Tabulated sheet	----	----
**Bulletin No. 34. Mineral Production of California for Seventeen Years, by Charles G. Yale. 1904. Tabulated sheet	----	----
**Bulletin No. 35. Mines and Minerals of California, by Charles G. Yale. 1904, 55 pp., 20 county maps. Relief map of California	----	----
**Bulletin No. 36. Gold Dredging in California, by J. E. Doolittle. 1905. 120 pp., 66 illustrations, 3 maps.	----	----
**Bulletin No. 37. Gems, Jewelers' Materials, and Ornamental Stones of California, by George F. Kunz. 1905, 168 pp., 54 illustrations	----	----
**Bulletin No. 38. Structural and Industrial Materials of California, by Wm. Forstner, T. C. Hopkins, C. Naramore and L. H. Eddy. 1906, 412 pp., 150 illustrations, 1 map	----	----
**Bulletin No. 39. Mineral Production of California, by Countites, for 1904, by Charles G. Yale. Tabulated sheet	----	----
**Bulletin No. 40. Mineral Production of California for Eighteen Years, by Charles G. Yale. 1905. Tabulated sheet	----	----
**Bulletin No. 41. Mines and Minerals of California for 1904, by Charles G. Yale. 1905, 54 pp., 20 county maps	----	----
**Bulletin No. 42. Mineral Production of California, by Counties, 1905, by Charles G. Yale. Tabulated sheet	----	----
**Bulletin No. 43. Mineral Production of California for Nineteen Years, by Charles G. Yale. Tabulated sheet	----	----
**Bulletin No. 44. California Mines and Minerals for 1905, by Charles G. Yale. 1907, 31 pp., 20 county maps	----	----
**Bulletin No. 45. Auriferous Black Sands of California, by J. A. Edman. 1907. 10 pp.	----	----
**Bulletin No. 46. General Index of Publications of the California State Mining Bureau, by Charles G. Yale. 1907, 54 pp.	----	----
**Bulletin No. 47. Mineral Production of California, by Counties, 1906, by Charles G. Yale. Tabulated sheet	----	----
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**Map of Forest Reserves in California	----	----
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Samples (limited to one at one time) of any mineral found in the State may be sent to the Division of Mines for identification, and the same will be classified free of charge. No samples will be determined if received from points outside the State. It must be understood that no assays, or quantitative determinations will be made. Samples should be in lump form if possible, and marked plainly with name of sender on outside of package, etc. No samples will be received unless delivery charges are prepaid. A letter should accompany sample, giving locality where mineral was found and the nature of the information desired.

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